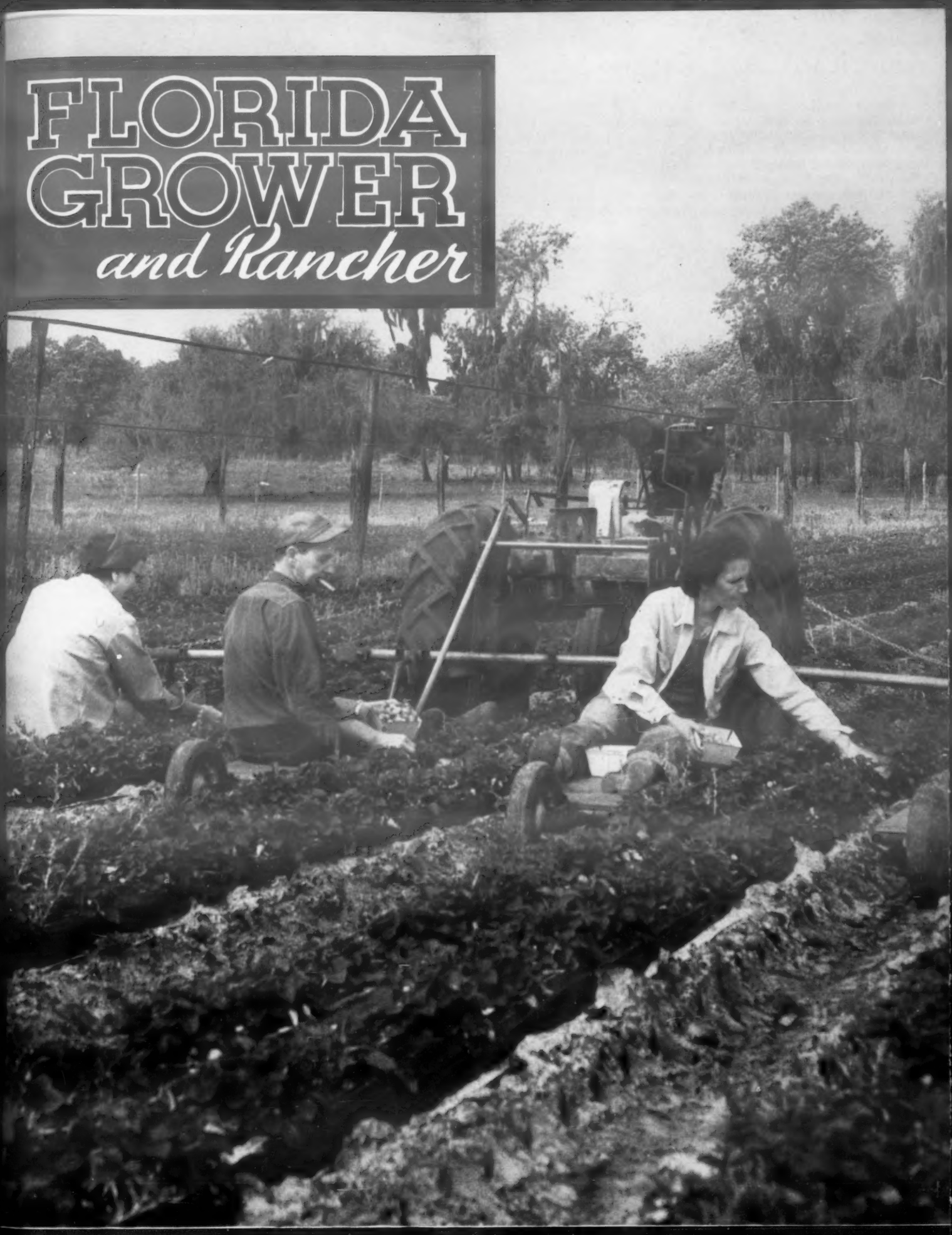
FLORIDA GROWER and Rancher



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Cutting Farm Machinery Costs ★ Price: 10 C

FLORIDA GROWER and Rancher

Management Aids Pest Control

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Cutting Farm Machinery Costs ★

February 1961

Price 50 Cents

Plastic Film Covers Speed Tobacco Seedling Production

PLASTIC FILM covers are equal or superior to cheesecloth in the production of tobacco seedlings, a series of experiments over the past three years have shown.

Climatic conditions varied considerably in each of the three years, according to S. L. Brothers, assistant agronomist with the Florida Agricultural Extension Service. He also reports the following:

During the three years, beds covered with plastic film had transplants ready to go to the field in about 60 days from seeding. The time ranged from 75 to 100 days for cheesecloth-covered beds.

Where plastic film is used, the bed should be prepared in the same manner as for cheesecloth. More attention, however, should be given to the construction of frames for holding plastic covers.

Mimeographed instructions and drawings on type of frames to use may be obtained from the county agent's office.

The answer to your CROP FEEDING and PEST CONTROL needs . . .

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Swift's farm service organization knows the complex business of farm plant foods and pesticides. They will help you develop a profitable plant food and pesticide program . . . that matches your individual needs.

Your Swift men have up-to-the-minute knowledge from daily contacts with agricultural leaders and successful farmers. This knowledge, plus Swift's own research and field test programs, helps give you profitable crop-growing ideas.

You would expect this service to be expensive, but it comes to you free from Swift.

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LIFT PAGE

FLORIDA GROWER and RANCHER

TAMPA, FLORIDA — FEBRUARY, 1961

Vol. LXIX, No. 2 — Whole No. 1361
(Established in 1908)

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FLORIDA TREND

Coming Events

Feb. 7-18: Florida State Fair, Tampa.
Feb. 13-18: Volusia County Fair, DeLand.
Feb. 18: Knollwood Angus Sale, Bartow.
Feb. 19-25: Sarasota Pageant, Sarasota.
Feb. 22-24: Suwannee River Fair & Livestock Show, Fannin Springs.
Feb. 22-26: Kissimmee Valley Livestock Show, Kissimmee.
Feb. 23-25: Sandy Shoes Festival, Fort Pierce.
Feb. 24-26: Silver Spurs Rodeo, Kissimmee.
Feb. 25: Chalo Nitka Festival, Moore Haven.
Feb. 27-28: North Florida Livestock Show & Sale, Madison.
Feb. 27-Mar. 4: Central Florida Fair, Orlando.
Feb. 27-Mar. 4: Pinellas County Fair & Horse Show, Largo.
Feb. 28: Florida Hereford Sale, Ocala.
Feb. 28-Mar. 4: Hendry County Fair & Livestock Show, Clewiston.
Mar. 2-4: Polk County Youth Show, Bartow.
Mar. 6-11: Florida Strawberry Festival, Plant City.
Mar. 10-12: Central Florida Orchid Show, Orlando.
Mar. 11-18: Florida Citrus Exposition, Winter Haven.
Mar. 13-18: Lake County Fair & Flower Show, Eustis.
Mar. 13-18: Martin County Fair, Stuart.
Mar. 14-18: Collier County Fair, Naples.
Mar. 20-25: Sarasota County Fair, Sarasota.

Profitable Pastures

IMPROVED PASTURES are paying off — especially for Florida's dairymen.

The average production cost of oat pasture was $41.41 per acre, recent studies conducted at the University of Florida Dairy Research Unit showed. Feed replacement value of the forage ranged from $68.88 to $94.08 per acre.

Production costs of pearl millet pastures ranged from $37.43 to $46.80 per acre; the replacement value, from $77.28 to $147.28 per acre.

Similar studies with white clove-pangola-grass pastures showed that when production costs averaged $80 per acre, there was an average feed replacement value of $220 per acre. This represents a net return of $140 per acre per year.

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ALL SWIFT'S PLANT FOODS ARE SPECIALLY MADE FOR YOUR LOCAL CROP AND SOIL CONDITIONS

Soil and crop conditions naturally vary from farm to farm. That's why the *new* line of SWIFT'S IMPROVED plant foods is tailored by the Swift factory in your area to fit your crop and soil conditions. As a bonus, Swift's research has developed new plant foods fortified with *extra essential growth elements*. Swift's improved plant foods pack the wallop that makes crops respond . . . give you an extra bulge in your pocketbook at harvest time.

See your local authorized Swift dealer right away. You will choose from a full line of Swift's specialized money-makers . . . **Blenn, Brimm, Pasturgro, Certified Formula, Bonro** . . . or **Red Steer.** All are chemically-hitched in Swift's exclusive FLO-FUSION process chamber . . . elements can't shake out or separate during hauling and spre
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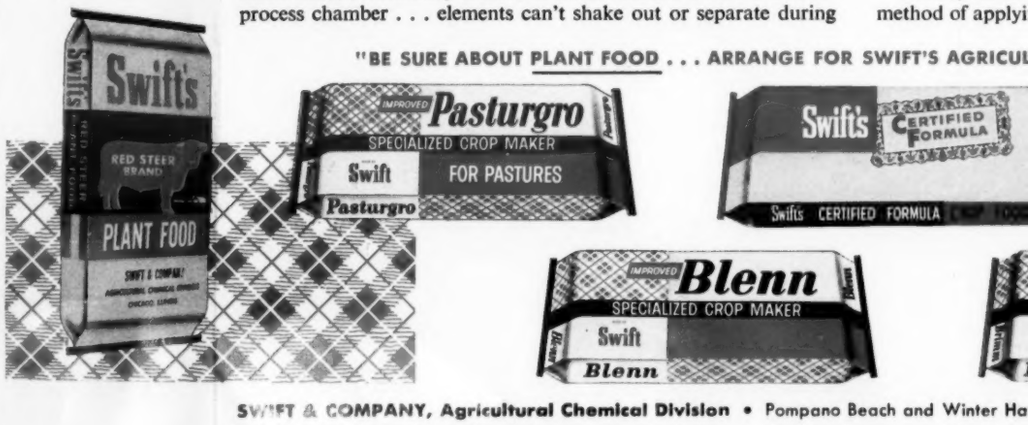

SWIFT & COMPANY, Agricultural Chemical Division • Pompano Beach and Winter Ha

Americans Are Eating More Vegetables

CONSUMPTION of commercially-produced vegetables has risen more than 23 pounds per person in the past 20 years. The use of fresh vegetables has declined, adds the USDA, as that of canned and frozen items has grown.

In 1939, civilian per capita consumption of fresh and processed vegetables averaged 174.6 pounds. By 1959, it was up to 198 pounds.

The average person consumed 116.6 pounds of fresh and 58 pounds of processed vegetables in 1939. Twenty years later, the average usage of fresh vegetables was 99.6 pounds; that of processed vegetables, 98.4 pounds.

Consumption of canned vegetables rose from 56.8 pounds per person in 1939 to 82.7 pounds in 1959. Frozen vegetable usage jumped from about a pound in 1939 to nearly 16 pounds in 1959.

Probably more tomatoes are consumed per person than any other vegetable, excluding potatoes. Per capita usage of canned and fresh tomatoes totaled 56.7 pounds in 1959, 16.3 pounds more than in 1939. About 75% of the tomatoes consumed are canned.

Sweet corn consumption averaged 24 pounds per person last year; green peas, about 1[illegible] pounds.

our plant food and pesticide needs ... SWIFT

auling and spreading . . . your crops are fed uniformly.

Remember, it's the dollar difference at harvest time that counts.

Your choice of SWIFT'S BULK or BAG SERVICE

Take your choice . . . bag or bulk. Swift's Plant Foods come to you in the way that best fits your operations.

Swift's new portable bulk bins eliminate bag costs . . . reduce labor and time to a minimum. Swift's bulk bins on your truck can be filled as often as you wish . . . ready for unloading at your convenience.

Bulk truck spreading on your fields is available in many areas . . . easy as lifting your telephone.

Either way, bag or bulk, you get the same high-quality plant foods from Swift.

Let your Swift dealer assist you in determining the sensible method of applying plant foods on your place.

HERE'S HOW TO GET THE GREATEST BENEFIT FROM EVERY DOLLAR YOU INVEST IN PESTICIDES!

Modern crop pesticides offer you an opportunity to greatly increase yield, improve quality of the crops and most important . . . *bring your growing costs down.*

The results you get with pesticides start with the manufacturer. Results depend on how he tests, formulates, packages, controls quality and delivers. And results also depend on you . . . the brand you choose . . . the basic formula . . . the timing and method of application.

You are assured top results from pesticides if you use *this winning combination:* 1. Swift's Pesticide Advisory Service (available through your Authorized Swift Dealer). 2. **Gold Bear** insecticides and weed killers.

Swift & Company has many years of experience in creating and manufacturing pesticide formulations that help farmers control their crop problems so they make more money.

"IFT'S AGRICULTURAL CHEMICAL SERVICE NOW!"

"BE SURE ABOUT PESTICIDE . . . . CONSULT YOUR SWIFT DEALER NOW!"

and Winter Haven, Florida

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your plant food and pesticide needs... SWIFT

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SWIFT'S AGRICULTURAL CHEMICAL SERVICE NOW!"

"BE SURE ABOUT PESTICIDE . . . . CONSULT YOUR SWIFT DEALER NOW!"

Beach and Winter Haven, Florida

The Cover . . .

Our cover photo this month shows how strawberry picking has become mechanized in Florida.

Picker-laden carts are pulled slowly through the fields by a self-guiding machine called a "jenny." A somewhat heterogeneous implement, the "jenny" is made up of part tractor and part air-cooled auxiliary engine.

Those of us (including ye editor!) who grew up on a strawberry farm well remember the many backaches this gadget would have eliminated, had it been invented about 30 years ago.

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Your Local Swift's Crop Advisor is a Specialist in Florida Crops and Growing Conditions.

Austrialians Lead in Citrus Mechanization

Citrus mechanization is progressing more rapidly in Australia than in America, according to a University of California agricultural economist.

Roy J. Smith, according to the *Fruit & Vegetable Review*, made this discovery while spending a sabbatical leave in Australia. He is a recognized authority on the bulk handling of citrus.

Specifically, Smith stated that Australian growers are moving faster than Americans in efficiency of handling fruit between the grove and packing house.

Key factor in the Australians' speed is a new type of bulk bin. It has spurred growers there into converting to bulk bin handling more quickly than Florida or California citrus producers are doing.

One reason the Australians have moved faster than U S.. growers, according to Smith, is that they had less automatic equipment to begin with. Thus bulk handling could be introduced without abandonment of costly automatic dumps, stackers, and other devices.

The Australians are using a light, rigid bin that does not damage fruit. The bin has been so successful, as a matter of fact, that its design has been patented.

Smith revealed that the bin is expensive. However, he added, the Australians can use it economically because they use it intensively.

Each bin travels between grove and packing house two or three times a day. The fruit is emptied within an hour.

In the groves, the bins are handled by tractors equipped with fork arms or by the use of trailers.

How smart are YOU?

1. If a wet hobo is a "damp tramp," what is a languid crustacean?

2. What is an *expurgated* edition of a book?

3. By what more familiar name is the paleolithic age known?

4. Which U. S. President had the most children?

5. Are marble and granite equally weatherproof?

6. What are the last six words of the Pledge to the American Flag?

7. In pharmacy, what is a "tincture?"

8. What is the greatest source of internal revenue collections?

9. How long ago was Phi Beta Kappa formed?

10. What was the profession of writer Oliver Wendell Holmes?

(Answers to Questions on Page 38)

State Increases Emphasis on Pesticide Residue Control

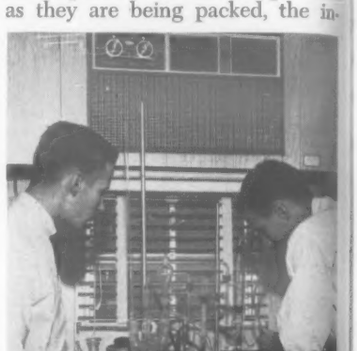
INCREASED protection from pesticide residues is assured consumers of Florida fruits and vegetables, thanks to an expanded program of the State Department of Agriculture.

The control program started year before last, when a mobile food laboratory was sent to major vegetable producing areas to check pesticide residues on various commodities. Some 53,000 pounds of vegetables were destroyed as a result of this program.

Renewed emphasis was recently given to this inspection activity. Now, two mobile units are covering the state's growing areas.

Plans are being made to permanently locate the larger unit (which went into action in late December) in the Belle Glade area where more than 70% of all Florida's vegetables is grown. The smaller unit will cover the other vegetable producing areas in the state.

Both laboratory trailers will also be used for other types of food inspection. Such work will include the inspection of canned vegetables as they are being packed, the inspection of meat food products, the checking of freshly ground cornmeal, and testing other miscellaneous food items.



BELLE GLADE VEGETABLE is carefully checked for pesticide residue content by Florida Department of Agriculture technicians Sam Draper (left) and Walter Mitchell.
Florida State News Bureau photo

Three employees – a chemist, a lab technician, and an inspector – are assigned to each unit. Each employee is well qualified in his particular field of work.

* * *

Future Food Needs

By 1975, it is estimated, the U. S. population will reach 230 million – and will require much more food than is produced today.

To feed the larger population, farmers and ranchers will have to produce 16.3 billion pounds more of red meat, 47 billion pounds more of milk, 20.7 million tons more of fruits and vegetables, and 20 billion more eggs.

* * *

What is easy is seldom excellent.

★★★★★★★★★★★★★★★★

ANNOUNCING THE ALL-NEW FIRESTONE TRANSPORT-100 TRUCK TIRE INCREASES MILEAGE 50%...AND MORE!

Proved in 100 million miles of fleet tests to bring you 50% more original-tread mileage and much greater drive-wheel traction than any other regular original equipment Firestone truck tire! The all-new, *all-wheel position* Transport-100 wears far longer—actually gives you faster starts and quicker stops when half-worn than other original equipment truck tires when new. *And*, it's the first truck tire anywhere truly *noise-treated* for quieter running. Yet it costs no more! In Nylon or Tyrex® rayon cord, tubeless or tubed. See it at your Firestone Dealer or Store!

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NEW INNER-RIB BLADED TREAD increases traction, lateral stability. Positive steering on curves —wet or dry!

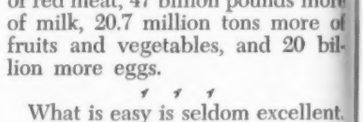
NEW—UP TO 30% DEEPER GROOVES, buttressed for strength; longer-lasting tread on *any wheel position*.

NEW EFFICIENT TREAD DESIGN: broad center rib equalizes load distribution, reduces slippage, increases mileage.

NEW "STONE GUARDS" built right into the tread keep it free of gravel and pebbles to increase truck tire life.

NEW FLATTER CROWN means equal pressure throughout tread print—for extra load-hauling, extra mileage.

Tune in Eyewitness to History every Friday evening, CBS Television Network



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SEE YOUR DEALER FOR DITHANE M-22—contains 80% maneb

Sweet corn growers are finding that DITHANE M-22 (maneb) fungicide gives long-lasting protection from Helminthosporium leaf blight and Puccinia rust. DITHANE M-22 sprays keep plants green and healthy . . . pay off in higher yields of top quality ears.

Florida celery growers are discovering the superior protection DITHANE M-22 gives against blights . . . even under severe weather conditions. For disease-free fields and higher yields apply DITHANE M-22 on a regular schedule.

ROHM & HAAS
PHILADELPHIA 5, PA.

DITHANE M-22

Tariff Act redress asked

Florida's Citrus Industry Battles British Restrictions

PLAINLY peeved at what it considers the "run-around" received from the U. S. State Department for the last seven years, Florida's citrus industry is banking on a 1930 law to pry open the British market for a reasonable volume of Florida fresh and processed citrus fruit.

Florida Citrus Mutual is spearheading the new effort which could be an effective trump card in once more getting Florida citrus into British stores.

Great Britain was an important customer for substantial quantities of Florida citrus fruit, particularly in processed form, before World War II. Since the war ended, Florida shippers and processors have tried desperately to reopen this market—but with practically no success.

The new effort by the industry involves an investigation of the British situation by the U. S. Tariff Commission, under the terms of the Tariff Act of 1930.

As outlined in a letter to Senator Spessard L. Holland by Robert W. Rutledge, Mutual's executive vice president, this investigation would be done "completely independent of State Department assistance or influence, and come up with appropriate countermeasures."

"With the exception of one season, 1946-47," continues the complaint filed with Senator Holland and all other members of the Florida congressional delegation, "the United Kingdom has severely restricted imports of U. S. citrus since the end of World War II.

"Justification for such action was originally based upon dollar shortage or balance-of-payment difficulties. In recent years, however, the United Kingdom's gold reserves and dollar holdings have improved substantially." Included in the complaint is a table showing U. K. gold reserves and dollar holdings increased from $3.015 billion on December 31, 1956 to $4.487 billion on June 30, 1960.

Seventeen countries are permitted to send citrus into Great Britain under open general license, that is without either quantitative or season restrictions of any type.

Citrus exports are restricted from only three countries: Cuba, Mexico, and the United States. Of these, only the U. S. has been a traditional supplier of citrus to England since pre-war years.

"This was particularly true," the complaint states, "of processed items such as canned grapefruit sections, where Florida annually furnished an average of 35 million pounds during the 1935-38 period."

Great Britain is presently restricting citrus products from the U. S. to fresh oranges which are not artificially colored and to the following annual quotas:

(1) 1.115 million pounds sterling of fresh grapefruit which must be imported between March 1 and September 30, (2) 300,000 pounds sterling of canned citrus juices, and (3) 450,000 pounds sterling of canned grapefruit sections.

Seasonal limitations imposed on grapefruit mean that the U. S. has

(Continued on Page 38)

Buyer's-eye view of S-P-M citrus quality
Peel and section a Sul-Po-Mag grown orange. You can see, test and taste the improved quality Sul-Po-Mag adds to your grove's "diet."

better color...thinner rind...more vitamins in the juice

That's what buyers see in samples picked from trees nourished by Sul-Po-Mag. Citrus trees "like" what they get from Sul-Po-Mag — water-soluble magnesium that produces fruit of exceptionally good quality. Tests prove that, with adequate magnesium, rinds *are* thinner... color is brighter (inside and out)... and sugar and vitamin content of the juice are greatly increased. With Sul-Po-Mag, yields are greater too. Water-soluble Sul-Po-Mag stays in grove soils all season long... slowly releases magnesium nutrition for better tree health and higher fruit quality. Next time you buy fertilizer, ask for Sul-Po-Mag.

S·P·M PREMIUM
Quality fertilizer containing a combination of readily available magnesium and sulphate of potash obtained from Sul-Po-Mag®

This seal is your assurance of extra-value fertilizer

AGRICULTURAL CHEMICALS DIVISION
INTERNATIONAL MINERALS & CHEMICAL CORPORATION
ADMINISTRATIVE CENTER: SKOKIE, ILLINOIS

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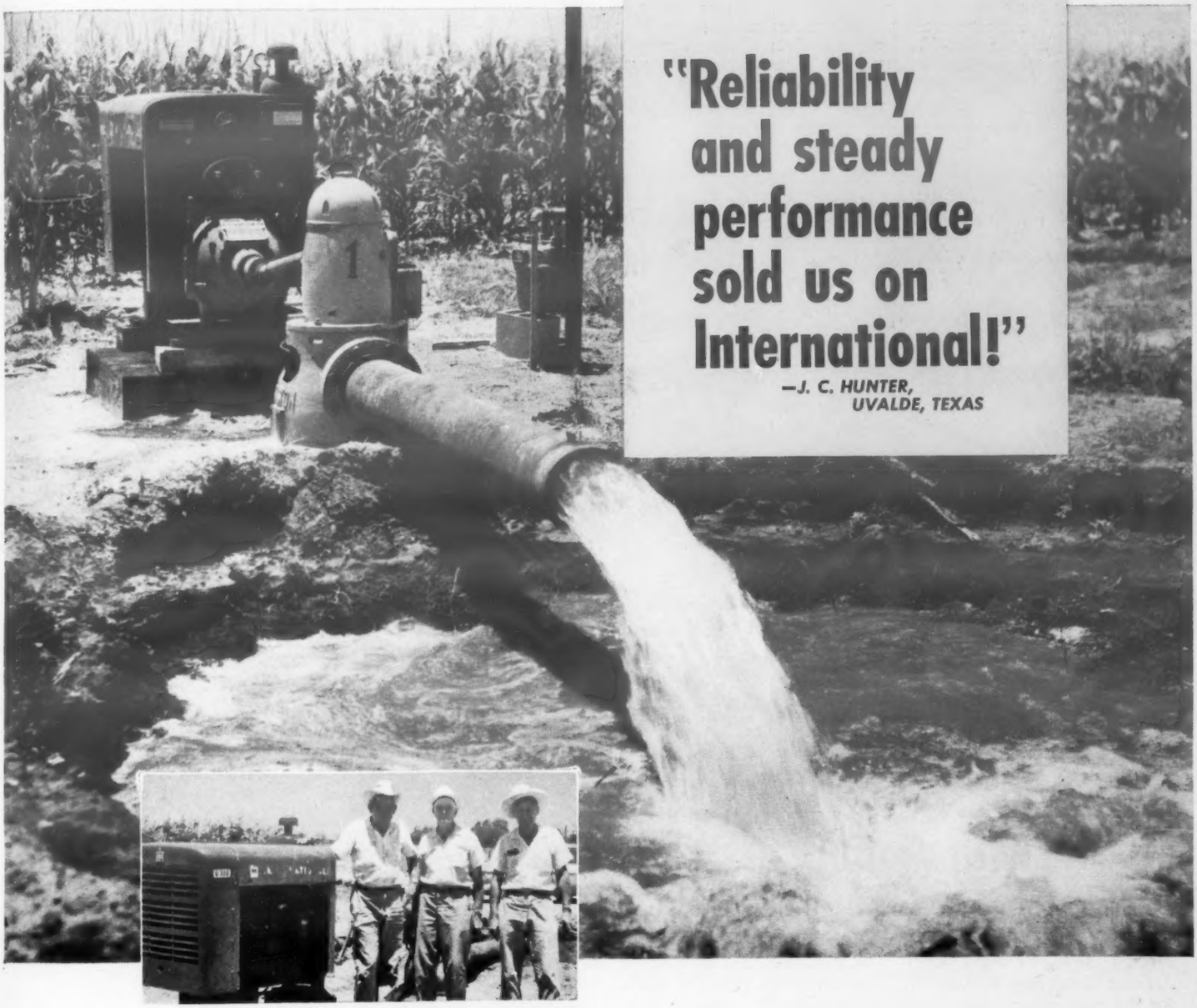
"I want you to see Dudley's prize-winning cow."



When an experienced and successful operator prefers one type of equipment over all others, it's interesting (and profitable) to find out why. J. C. Hunter and Sons, of Uvalde, Texas, insist on International power, and state their reasons clearly...

"We are getting all International engines because of their reliability and steady performance," says Mr. Hunter. "We have used IH equipment for years, and are well satisfied with it—and with the dealer's service. We're sure of top performance year after year!" The Hunter Farm has four International U-308's and an International U-450 working 24 hours per day. These engines pump a total of 6,000 gpm to suppy an open ditch syphon tube system irrigating cotton, maize and corn.

When you choose irrigation power, take a tip from experienced operators. Case histories from coast to coast prove that International power is best for over-the-years dependability and economy. There are 35 models in the IH line—16.8 to 385 max. hp—stripped engines to complete power units. Job-matched accessories, such as International's exclusive Flow-matic® cooling system, adapt the engine to special conditions or applications. For more information and installation assistance, see your nearby International Engine Distributor or Dealer.

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ENGINES

International Harvester Co.,
180 North Michigan Ave., Chicago 1, Illinois
A COMPLETE POWER PACKAGE

Effective Nematode Control

NEMATODES can be most successfully combated by using chemicals in conjunction with other control procedures, according to Dr. V. C. Perry, nematologist with the Gainesville Agricultural Experiment Station.

Dr. Perry says that chemicals, while far from perfect, represent the only means of quickly ridding large quantities of soil of harmful nematode populations. However, many other control procedures have been developed for specific usage.

Certain nematodes, such as cyst nematodes, have narrow host ranges. Consequently, the specialist points out, crop rotations are being used for successful control.

Flooding, drying, or combinations of the two are used in some areas — especially for the control of root-knot nematodes.

Plant quarantines are employed to prevent the spread of certain nematodes and also to assure purchasers of planting stock parasite-free plants. Hot water and chemical solution dips have been developed to kill nematodes within certain plant tissues.

Work is needed to improve determinations of plant parasitic nematode population potentials within given fields. In some cases, this might be accomplished by direct examination; in others, growing indicator plants may be best.

Recognition of the frequent nematode damage to perennial plants has emphasized the need for measures to rid infected plans and the surrounding soil of harmful nematodes.

In certain instances, some of the newer soil nematocides may be used. However, according to Dr. Perry, exact procedures for application are yet to be determined.

Likewise, systemic nematocides have been explored to some extent. At present, though, there is little indication of success.

"Searches for breeding stocks resistant to nematodes should be broadened," the specialist asserts. "But this appears limited to localized areas because of the geographical variations both within and between species of the parasites."

Certain cultural control practices may be further developed for local areas also, Dr. Perry adds. He warns:

"In other words, future research in developing control measures for the plant nematodes must follow not only the chemical measures ... as has been the tendency since 1945.

"Growers who most successfully combat nematodes in the future, it is believed, will do so by a combination of several procedures."

Mr. Dan Travis and Mr. Albert Davis, foreman of Travis and Travis Farms, examine peppers from their fine Vertagreen-grown crop.

Florida Farmer Has Outstanding Pepper Crop with Armour Vertagreen®

Mr. Dan Travis of Travis and Travis Farms, Fort Myers, Florida, says, "I have used Armour Vertagreen exclusively for the past seven years, and have always been highly satisfied with the results. My pepper crop last year is a very good example of Vertagreen's superiority. Last winter was one of the worst we have had in Fort Myers; it was abnormally cold, and we had excessive rains. However, my spring pepper crop fertilized with Florida-formulated Armour Vertagreen 6-6-6 produced outstanding yields of high-quality peppers. We harvested 204 bushels per acre on the first picking, with 188 bushels grading fancy. Subsequent pickings were also exceptionally good. Since all spring crops in our area were late, the fact that our crop matured a couple of weeks earlier than the average gave Travis Farms a definite marketing edge. Armour Vertagreen helped in every way to make our pepper crop a very profitable one."

Top growers like Mr. Travis realize the importance of using only the best fertilizer on their crops. That's why more and more of them are putting their confidence in Armour Vertagreen, the complete, premium fertilizer that brings in high yields of superior quality year after year. After all, "it isn't how little a fertilizer costs, but how much it does that counts." See your friendly Armour agent for Vertagreen, and let your increased yields and profits prove to you that ***Armour Vertagreen is worth more because it does more!***

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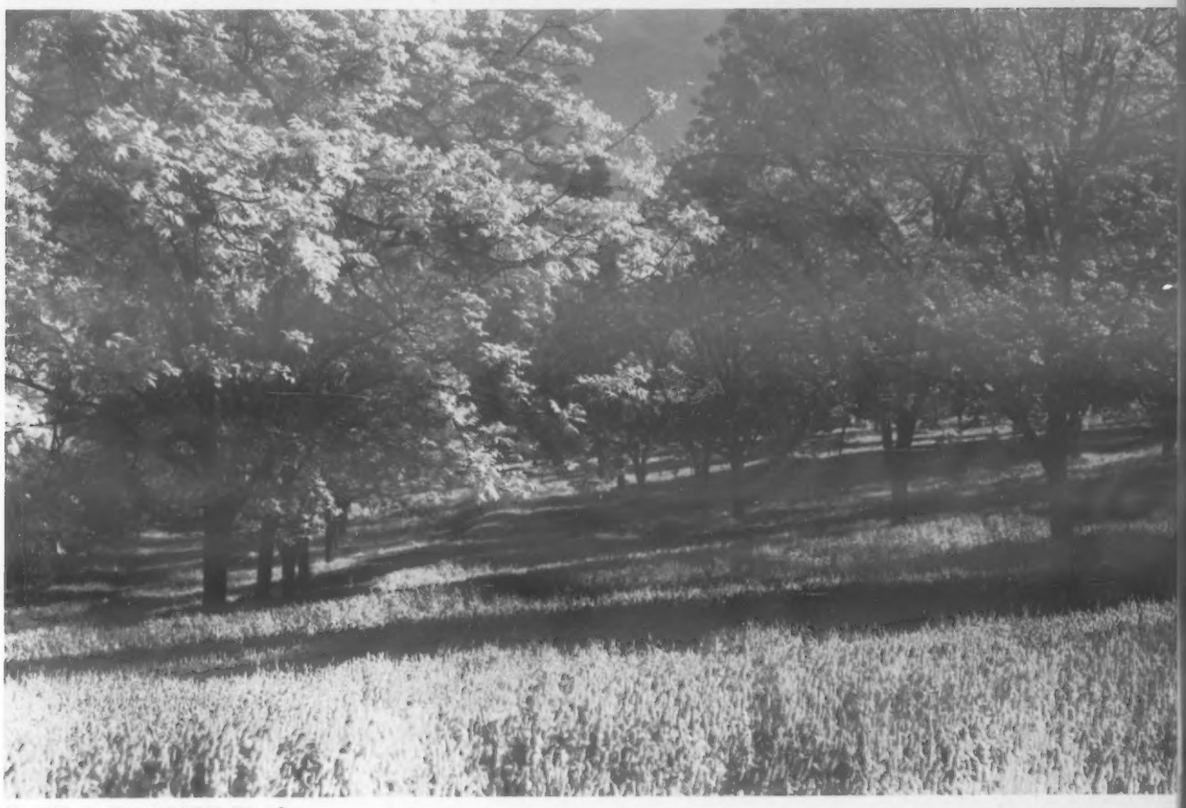


By DR. A. N. TISSOT, Head, Entomology Department, Agricultural Experiment Stations

Crop Management Curtails Insect Depredations

CHEMICAL CONTROL is the first line of defense against destructive insects. Pesticides, of course, provide the quickest way of protecting our crops from insect depredations. However, this is by no means the only way of fighting the many pests with which we must contend.

Virtually everything that is done to plants affects their susceptibility or resistance to insect attacks. The way a crop is handled, therefore, has considerable influence on the amount of damage caused by insects. Sometimes the effect of a particular process is marked and easily recognized. In other cases, the relationships are less obvious and we can only guess at the interaction between pests and host plants and various management practices.

In this article we will consider, in a general way, a few of the common crop production operations used in Florida and try to see how they affect insect pests and their control.

The ideal solution of the pest control problem would be to modify the usual cultural practices for a particular crop so that insect damage would be eliminated without added expense to the grower. This goal seldom is attained. Yet damage frequently can be reduced to such an extent that only a minimum amount of insecticidal control is needed.

Careful attention to preparation of the land before the crop is planted is extremely important. It will often prevent, or at least greatly reduce, later crop injury by insect pests.

Weed growth in idle fields or the remains of a previous crop frequently harbor crop pests. Many of these, soil-inhabiting pests in particular, will escape the plowing, disking, etc. and survive for a time on plant material in the ground. It therefore is desirable to prepare the seedbed as long in advance of planting as is consistent with good management practice.

Growers sometimes mix insecticides with fertilizer to control soil-inhabiting pests. They do not always realize, however, that the fertilizer itself can influence the susceptibility of a crop to insect attack or can modify the damage done by insects.

Liberal fertilization of pastures, especially Pangolagrass, often results in heavy aphid infestations a few weeks later. Too, cattlemen know that armyworms and grassworms generally are most numerous in the better areas of their pastures where the grass is well nourished and luxuriant.

Experiments and observations in citrus groves have demonstrated that certain elements in fertilizer – although needed to properly nourish the trees – sometimes also induce mite or insect infestations.

On the other hand, adequate fertilization of plants will help them to withstand insect attacks. A well-nourished, vigorous plant usually puts out new roots or leaves to replace parts destroyed by insects. A weak plant which suffers comparable damage, however, often dies.

The occasional adverse effects certainly should *not* discourage the use of a fertilizer program that otherwise benefits a crop. Higher yields and better quality produce from well-fertilized crops generally pay well for whatever extra pest control is needed. Furthermore, the grower usually realizes a nice margin of profit.

Rotation of crops often is advocated as a means of avoiding certain plant disorders. There can be no question that crop rotation is desirable

(Continued on Page 18)

HEN WITH GOOD COMB (right), had normal daylight, 10-12 hours, each day. The Leghorn on the left daily got 16 hours of light.

By THOMAS J. HUGHES

Effect of Light on Pullets

RESTRICTED LIGHT can be used to delay sexual maturity of pullets, Dale F. King, poultry husbandman at Auburn (Alabama) University, reported recently. Almost simultaneously, USDA tests at Glendale, Arizona indicated that too much light too soon also — and adversely — delays maturity of pullets.

Few producers, according to King, realize the great benefits to be obtained from correct use of lights on pullets during the growing period. This practice delays the time pullets start to lay. If sexual maturity is delayed 10 to 14 days, the birds will lay more eggs and produce fewer small ones during the laying year.

The same advantages from delayed sexual maturity can be achieved by restricting the feeding during the growing period. However, it is believed easier and safer results are obtained by the use of lights.

Sexual maturity can be delayed in growing pullets by two different light procedures. The poultryman may restrict the length of the light period each day during the growing period, keeping it constant from day-old to five months.

Conversely, the producer may start day-old chicks on a relatively long light period each day but reduce the length of light day each week during the growing period. The choice will depend largely on the type house available for growing pullets.

The less light pullets receive each day during the growing period, the older they will be when they start laying. The effects of various day lengths on age of maturity and subsequent egg production are shown in the following table.

Effect of Amount Light in Growing Period on Age to 10% Production and Rate of Lay for Following 4 Months, 2-Yr. Av.

Light treatment	*Age of 10% production*	*4-month rate of lay*
	Days	*Per cent*
All dark	167	75.4
2 hours	163	84.9
4 hours	157	83.2
6 hours	155	84.6
8 hours	152	77.8
10 hours	151	70.6
12 hours	149	84.0
14 hours	147	76.5

In comparing the average age of sexual maturity, there is a direct decrease in maturity age as the amount of light is increased up to 14 hours per day.

Production results show that pullets raised on a 6-hour light day will outlay those raised under natural daylight by 20 to 24 eggs per hen per year. If a windowless, fan-ventilated house is available for growing pullets, the birds should receive six hours of light and 18 hours of darkness each day throughout the growing period.

Birds exposed to long light days when they are young, with weekly decreases in day length, will be older when they start laying than birds raised on a constant 14-hour day. Likewise, they will be older than pullets raised on a weekly increasing light schedule.

One test group was raised on a light schedule in which the day length was increased weekly by about 40 minutes per day. These pullets (see accompanying table) matured 21 days later than those on a constant 14-hour day

However, research findings indicate that this delay in maturity is a little too severe for best rate of lay for the year. So it is suggested that a weekly decrease of 15 minutes per day be used during the growing period.

Effect of Increasing or Reducing Light in Growing Period on Age to 10% Production and Rate of Lay for Following 4 Months, 2-Yr. Av.

Light treatment	*Age of 10% production*	*4-month rate of lay*
	Days	*Per cent*
Increased from 6 to 22 hours	145	79.3
Constant 14-hr. day	147	76.5
Decreased from 22 to 6 hours	168	90.8

This light schedule can be used in an open-front type house by giving day-old chicks about five hours more light than they will receive from natural daylight when they are mature. Weekly reduce light 15 minutes per day throughout the growing period.

Either of these lighting schedules can be used for growing pullets hatched any time dur-

(Continued on Page 29)

MAGNETS CAN BE administered with an ordinary balling gun.

The Threat of Hardware Disease

By DR. JAMES M. WING
Assistant Dairy Husbandman
Gainesville Experiment Station

MODERN MACHINES and methods generally have benefitted both man and beast. They have, however, also increased the danger from hardware disease.

Greenchop, silage, and chopped or wafered hay may contain sharp objects gathered up unintentionally from the field. This includes nails, screws and bolts, pins, wire from electric fences—in fact, almost anything that could have fallen from a machine or have been lost by workers, children, or even other animals.

Not too long ago, for example, Vermont Extension workers found the following in the stomach of one cow: a set of gold bridgework, half an innertube, two plastic bags, nine pennies, a rubber doll, a toy watch, a fishing spinner, five clothes pins, six can lids . . ..

Also a stack of bobby pins, 24 bottle caps, two earrings, two hypodermic needles, several cartridge cases, two rubber heels, five coffee can bands, a key chain, a broken bottle, several safety pins, a watch band, and 16 nails.

Of course, the foregoing is unusual. But it does illustrate the extent to which foreign objects may be gulped down by cattle. This is because they don't chew their feed as it is gathered; thus they don't notice foreign objects in forage, especially if the roughage is chopped or if they are limited to a small strip of grass under an electric wire fence.

Hardware, being heavier than feed, moves forward into the honeycomb-like structures of the second stomach compartment. Then several things may happen:

First, the hardware may lie dormant and the cow may have no trouble at all.

Or the hardware may pierce the stomach wall. If the wound is slight, a temporary loss of appetite may be the only symptom.

A more serious injury may cause vomiting, pain, walking stiffly with a cautious gait, constipation, labored breathing, or swelling in the chest area.

Perhaps the hardware may be free in the reticulum or sealed in scar tissues for months, then cause trouble. This happens often right after calving, when considerable pressure has been exerted on the internal organs and hence the hardware could be forced into the heart cavity.

Usually, treatment of hardware disease follows one of four methods:

The afflicted animal is kept standing on a platform which keeps the front end higher than her rear. This may keep the foreign object confined to the stomach area long enough to be sealed off by scar tissue.

Veterinarians may use a magnet with special equipment which helps them to drop it into the reticulum. The magnet then is withdrawn, bringing the metal object with it. Of course, the troublesome object may not be metal—or the magnet may not reach it.

Several small magnets, which often hold metal objects and prevent further injury, can be dropped into the stomach. These magnets can be given as a precautionary measure. They are not a sure preventative, however.

Also, the veterinarian can make an incision at the triangle formed by the last rib, hipbone, and backbone. With special forceps he can then locate and remove the foreign object.

When the trouble has gone far enough to cause noticeable swelling in the chest area, the chances are that the heart cavity lining is infected. This usually is too late for operating. Then it's best to try some other method and to sell the animal, unless it is especially valuable to the breeding program.

Difficult to diagnose before swelling occurs, hardware disease is handled best by "Safety First." The following program may serve as a guide:

Be hardware conscious. If a pin or other small tractor part is lost in the field, *FIND IT!* Be sure all workers know that their time is not wasted if they stop to pick up metal objects around the farm.

Have thorough clean-ups of the whole farm frequently. Scraps of fence, baling wire, cans, bottles, and other sharp articles must be picked up.

Keep hay feeders, mineral boxes, and other equipment in good condition.

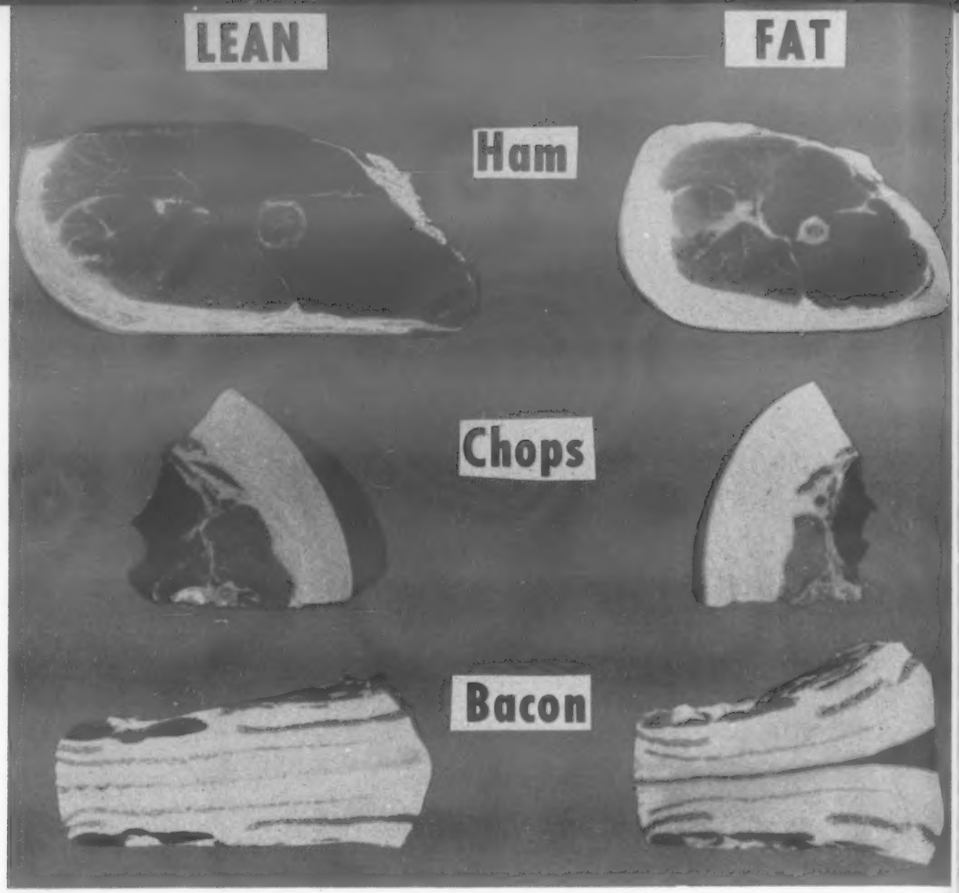
Clean up after each job which involves scraps of metal or other objects like nails, screws, or small bolts.

Set aside a regular storage place for junk. And sell scrap metal at least once per year.

Provide containers around the pasture area so the workers will have a place to put the objects they pick up.

DILAPIDATED FEEDERS are a threat—the farm must be kept free of junk.

LEANNESS Made to Order



LARGER, LEANER, AND MEATIER cuts (left) came from fourth generation Durocs bred for leanness on the basis of low back fat. Those on the right came from fourth generation high-fat line of Durocs. USDA Photo

IN MUCH earlier times, the lard-type hog was the profitable hog. Its excessive fat, as a matter of fact, came in handy for a number of things, including use as an ingredient in home-made soap.

But that was before the days of detergents, homogenized shortenings, and calorie-conscious consumers.

Now, the days of the lard-type hog are numbered. Geneticists and nutritionists the nation over are working hard to slim him down. To help Florida's swine producers stay abreast of developments, we herewith summarize some recent research findings.

Durocs bred for leanness on the basis of low backfat thickness develop a higher proportion of lean meat, recent USDA studies show. In addition, they're heavier at weaning and gain weight faster after weaning than Durocs selected for high backfat.

Fourth-generation 200-pound Duroc hogs selected for low backfat yielded an average of 8.2 pounds more lean and 9.6 pounds less fat than fourth-generation 200-pound Durocs selected for high backfat.

In actual tests, the lean Durocs averaged 29% less fat and yielded 11% more in lean cuts than the high backfat hogs. The loin eye muscle area of the lean animals averaged 1.1 square inches larger than in the fat hogs.

Backfat thickness in the foundation stock averaged 1.49 inches. This increased about 21%, to 1.82 inches, in the high-fat lines. In pigs bred for leanness, it decreased about 17%, to an average of 1.25 inches.

Lard-type hogs showed a progressive decrease in weaning weight and in post-weaning growth rate; the opposite was true of the low-fat animals. The former averaged 29.7 pounds at weaning and made an average daily gain of 1.47 pounds from weaning until they were probed for backfat thickness at 175 pounds. Low-fat Durocs, on the other hand, averaged 35.2 pounds at weaning and 1.58 pounds in daily gain.

This difference in growth rate is attributed to the fact that high-fat dams tend to be lighter at both breeding and farrowing time. Consequently, they are not as able as lean dams to provide nutrients to offspring during the embryonic and suckling periods.

No difference in litter size at birth or at weaning was found between the two groups of hogs. This suggests that selection has had no adverse effects on fertility or the mothering ability of the dams in either line. Both lines averaged about 10 pigs per litter at birth and 7.7 pigs at weaning in the fourth generation.

In the Yorkshire lines, selection for high and low fatness has been carried through two generations. Backfat thickness of the foundation stock averaged 1.26 inches. In the two generations, this has increased 5% to 1.32 inches in the high-line pigs; declined 5% to 1.20 inches in the meat-type hogs.

Yorkshire responses of weaning weight and post-weaning growth rate have – so far – been opposite to those in the Duroc lines. This apparent contradiction is believed due to the fact the Yorkshire foundation animals generally were larger and leaner than the Durocs.

Consequently, say geneticists, a given change in fat had no immediate effect. Or, at least, the effect on the Yorkshires' growth rate was less pronounced than that on the Durocs.

Differences in carcass yields and measurements between high and low-line Yorkshires have been smaller thus far. However, they are pointing in the same direction as those in Durocs.

High-fiber, low-energy diets are useful in producing lean hogs that gain efficiently and economically.

This report comes from J. A. Hoefer, nutritionist at the East Lansing Agricultural Experiment Station, Michigan. Working under contract with the USDA, Hoefer is trying to develop rations that can produce gains which go into lean instead of fat tissues.

Preliminary results of the first experiment showed that pigs fed corncob meal as the source of fiber did unusually well. Three more experiments will be conducted on the same lines.

If the *level* of fiber in succeeding experiments proves to be more important than the *source*, then rations based on corncobs may be used to improve both carcass quality and economy of production.

Feed that pigs get is used first for maintenance, then for growth and fattening. Unfortunately, too many pigs produce too much of their weight gains in the form of fat when full-fed.

Hoefer's solution is to full-feed pigs on a high-energy ration up to 125 pounds – most weight gains up to this time go into growth – and then restrict energy intake by increasing fiber content until market weight.

In his tests, 42 weanling pigs were full-fed a high-energy basal diet until they reached 125 pounds. The pigs were then divided into six groups.

Five of the groups were placed on a diet high in one fiber – barley, oats, wheat bran, alfalfa, or corncob meal. The sixth group, a control lot, was continued on the same diet as before.

All fiber-containing rations were essentially equal in protein, TDN (total digestible nutrients), and fiber content. This allowed for a direct comparison of fiber sources.

Pigs were slaughtered when they reached approximately 210 pounds. Then, complete carcass data were obtained.

Results showed that the animals on corncob meal did surprisingly well on all counts. They gained 1.29 pounds daily and averaged 4.30

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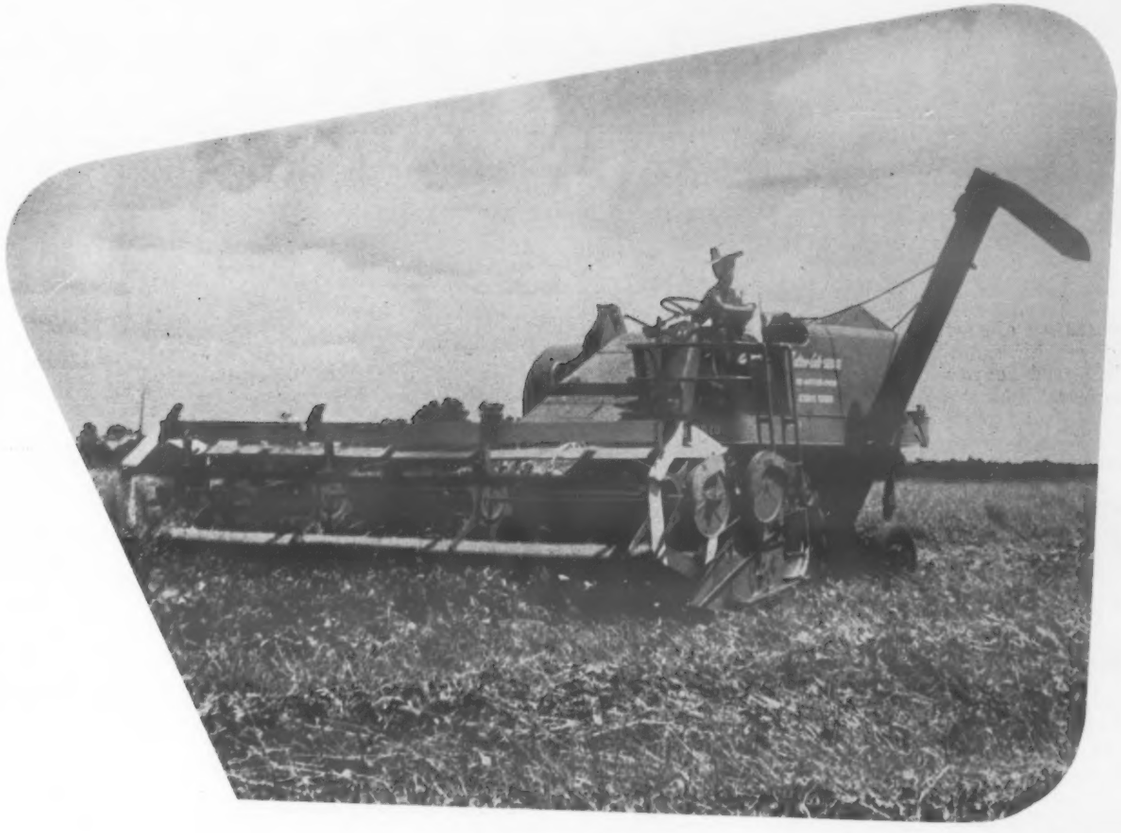

WE CAN REDUCE FARM MACHINERY COSTS

BY DALTON S. HARRISON
Assistant Agricultural Engineer
Florida Agricultural Extension Service

IF WE ARE to have a profitable farming enterprise today, we must have adequate farm machinery and equipment. The thesis that "we must spend money to make money" is especially true in the diversified farming operations in Florida.

But before leaping into a spending program, we should first look into the efficiency of our farming operations. Let's ask ourselves the following three questions concerning machinery and equipment costs:

"Which costs should I increase and which should I cut? Which cost can I cut that will not cut my income? And which machines are not essential to my farming operation?

In a recent survey of farms in Santa Rosa and Okaloosa Counties, Clifford Alston, farm and home development specialist of the Florida Agricultural Extension Service, found that 18% of the farm expense of livestock farms was for machinery and equipment. For general crop farms, this same machinery and equipment expense jumped to 25%.

The foregoing are average figures; as such, they indicate to us that expenses for machinery and equipment on the average farm in Florida run from about one-fifth to one-fourth of our total farm expense. On many farms, the machinery and equipment expense runs some 40% of the total farm expense—exceeded only by fertilizer costs.

When our cost of machinery and equipment is of this magnitude, it behooves us to take a second look and see where we can reduce our farm machinery costs. The following principal guides indicate how excessive equipment expenditures may be reduced.

Before buying farm equipment, we must consider several factors. First of all, we must decide which make, size, and type best fits our needs. Our choice of a brand machine is largely like automobile ownership . . . mostly a matter of personal preference. Nevertheless, we must ask ourselves:

"Can we get prompt and efficient repair service when our machine breaks down?" The answer to this question should influence our decision in buying a brand name rather than personal preference.

However, the above factor is hardly adequate when making a decision to purchase a machine. We must also make an economic analysis of ownership costs and of operating costs. And there are other related costs which must be considered before we close a deal.

Ownership costs are mostly fixed costs; they include depreciation, taxes, insurance, interest on investment, and housing. These costs amount to about 15 to 20% of the new cost of the machine per year. Except for depreciation, ownership costs are the same whether you use the machine 100 hours or 1,500 hours. Machines depreciate by wear and by becoming obsolete.

Making up our *operating costs* are (1) repairs and maintenance, (2) lubrication, and (3) fuels. These costs run from 3.5% of the new cost for tractors to 4.5% for forage harvesters. Harrows, grain drills, cultivators, and planters will average 2.5 to 3.5%.

Usually, repairs and maintenance are low for the early life of the machine. However, 3.5% is considered a good average.

Farm engines normally perform on the average of about 85% of their rated horsepower. Tractors normally require about 0.10 gallon of gasoline, 0.13 gallon of LPG, or about 0.08

(Continued on Page 21)

Citrus Insect Control for Spring 1961

By
R. B. JOHNSON, W. A. SIMANTON, AND W. L. THOMPSON
Florida Citrus Experiment Station, Lake Alfred

APPEARANCE of new growth in citrus groves invariably is a warning of increased activity by nearly all citrus pests. With the exception of rust mite and chaff scale, most species were near or below average abundance during the winter which means that heavy infestations are not likely to be numerous in early spring.

First to appear will be aphids. They will be unusually prevalent if growth starts early and ensuing cool weather prevents growth from rapidly expanding and hardening.

Six-spotted mites will increase in February and be troublesome in March and April. Rust mite, although generally trending downward, will continue to be a problem in numerous groves throughout the Spring.

Citrus red (purple) mite and Texas citrus mite may be expected to take a substantial upward trend in March that will continue through June.

Red scale will begin to build up markedly in April. Fortunately, purple scale is not expected to be a problem except in a few groves where excessive sulfur sprays have reduced natural control.

The outlook at present is for a high degree of infection of new growth by melanose and scab organisms. This implies that growers should be prepared early in the spring to make timely application of fungicide.

Spray program: The post-bloom spray is one of the three main sprays recommended for all Florida citrus. It is essential for the control of melanose, scab, greasy spot, and rust mite. However, materials for nutritional purposes and control of scale insects, spider mites, and other pests should be included where needed.

The timing of the post-bloom spray is as important as the selection of its ingredients and should be based as much as possible on the diseases, insects, and mites that must be controlled.

If a copper compound is required for scab and melanose, the post-bloom spray should be applied when two-thirds of the petals have dropped. Application should be delayed until one to three weeks after bloom for melanose alone. Materials for other purposes should be included in either case.

On the other hand, if copper is not employed, the post-bloom spray should be applied when rust mites first appear or earlier if other problems occur first.

Scab control: Rough lemon and sour orange nursery stock, Temple orange, lemons, Murcott, and some Tangelos are highly susceptable to scab and should all receive a full program of scab protection.

Grapefruit and tangerines are less susceptable. However, scab is often a problem on grapefruit in coastal areas where this disease is most prevalent.

Two sprays are recommended and usually needed for scab control. The first should be applied just before the start of the spring flush of growth to cover the old scab lesions. The second is needed to protect the fruit and new foliage and should be applied when two-thirds of the petals have dropped.

Neutral copper compounds are preferred for scab control at the dosage of 0.75 pound of metallic copper per 100 gallon of spray.

Although ferbam at 1.5 pound is an effective substitute for copper, it must not be used on fruit. Furthermore, it is of no value against melanose or greasy spot.

Ferbam is excellent, however, for scab on nursery stock and will give some control of rust mite.

Melanose and greasy spot: The best control of melanose on fruit is obtained when copper is applied from one to three weeks after the petals have dropped. But where large acreages are involved, where rust mite is also a problem, or where scab must be controlled, it is best to start applying copper as soon as two-thirds of the petals have dropped.

Applications of copper made during and after bloom are effective against melanose on fruit. They are too late, however, to protect the spring flush. Therefore, an extra application of copper is required just after the start of the spring flush of growth if foliage protection is required. Such an application will be needed where there are large amounts of dead wood, as in some hurricane-damaged groves.

Post-bloom copper applications are of value against greasy spot and should be used where this disease has been a problem.

SCALE AND MITE ABUNDANCE BY DISTRICTS AT MID-JANUARY 1961[1]

District	*Rust Mite*	*Citrus Red Mite*	*Texas Citrus Mite*	*Red Scale*	*Purple Scale*
West Coast	1.75*	1.09*	.50	.83	.92
Indian River	.94	.33	.56	.95	.79
Upper East Coast	.88	.88	.63	.75	.25
Gainesville	.17	.17	0	0	.33
Orlando	.59	.96	.18	.70	.78
Brooksville	1.65*	.65	.41	.65	.94
Ridge	2.11*	.26	.21	.91	.91
Bartow	2.25*	1.50*	1.00	1.09*	.64
State Average	1.32	.69	.39	.79	.77
Last Year	1.29	.77	.30	.75	.80

Abundance is computed from the number and intensity of infestations in groves not recently sprayed. Figures marked * indicate threatening conditions.

Citrus rust mite: Three rust mite miticides are recommended for use on bearing citrus. These materials are Chlorobenzilate, zineb and sulfur.

In addition, there are three combination miticides that are more or less effective against both rust mite and spider mites and are of some value in the post-bloom spray or prior to the summer scale spray.

The selection of a rust mite miticide for the post-bloom spray depends upon the other problems to be solved and upon the other materials in the spray.

The use of each miticide will be discussed in detail. In general, though, zineb is preferred except where rust mite is numerous and where copper is also employed.

Chlorobenzilate is preferable to zineb in sprays containing copper.

Zineb is as effective today as it was four years ago and is capable of the longest control of rust mite of all the available miticides. It is not perfect, however, and is of little value when improperly used.

One of the deficiencies of zineb is its complete lack of fumigating properties. Zineb kills rust mite only by contact and must reach the mites because the mites do not move from unsprayed to sprayed surfaces in sufficient numbers to produce a quick clean-up.

It would seem that thorough-coverage sprays should produce a good clean-up. But such is not the case.

Although it is not difficult to wet leaves and twigs with the usual thorough application, it is almost impossible to cover all fruit surfaces, especially on grapefruit. The backs of fruits and areas between fruits are not sprayed.

Consequently, rust mites on these areas are not destroyed. So poor control is the result.

Zineb should therefore never be used once rust mites have become numerous on fruit. On the contrary, the only way to use zineb effectively is to apply each application when rust mites first appear.

A second deficiency of zineb lies in the fact that its effectiveness is reduced by copper compounds because of a chemical reaction between the two. Although zineb-copper mixtures should be avoided, occasionally they are desirable.

In such cases, the dosage of zineb should be 1.0 pound per 100 gallon. This amount with copper will give slightly longer control than sulfur when applied thoroughly and before rust mite is numerous, but will not last as long as 0.5 pound of zineb without copper.

There is very little difference in the interval of control between 0.5 and 1.0 pound of zineb per 100 gallon. Yet there is enough to be significant when post-bloom is early.

If the post-bloom spray is applied in March or early April, 1.0 pound of zineb is preferable. On the other hand, 0.5 pound of zineb applied near the end of April or later should last at least until July first.

(Continued on Page 22)

[1]Written January 19, 1961. Reports of surveys by Harold Holtsberg, Fort Pierce; J. W. Davis, Tavares; K. G. Townsend, Tampa; T. B. Hallam, Avon Park; and L. B. Anderson, Jr., Lake Alfred.

MR. C. M. KIJHARSKE

Production Manager - Treasurer, Bay Lake Corporation, operators of over seven hundred (700) acres of citrus, Route #1, Groveland, Lake County, Florida;

Has This To Say About
FERTI-FOLIAGE

"For many years we have had a twenty five thousand to one hundred thousand tree citrus nursery. Our bearing citrus is composed of Hamlins, Valencia, Pineapple and Orlando Tangelo on Cleopatra Mandarin rootstock, Pink Grapefruit, Red Grapefruit Valencia, Pineapple and Murcotte on Rough Lemon rootstock.

"In 1958 we began supplementing our regular fertilization and pesticide program with **Ferti-Foliage** in the nursery, with excellent results.

"In the Spring 1959 we sprayed poor fruiting ten year old Orlando Tangelos with three **Ferti-Foliage** sprays at the rate of fifty (50) pounds per five hundred (500) gallon tank: Dormant, Post Bloom and when the fruit was about three fourths inch in diameter. October 1959, one month earlier than any previous harvest, these trees were clean picked and many trees picked six and seven boxes of fruit per tree. In 1960 the results were duplicated. Maximum yields of these trees prior to 1959 were one (1) box of fruit per tree.

"Severely cold damaged trees from the freezes of 1957-58 were supplemented with **Ferti-Foliage** sprays and the growth response has been phenominal. Two year old Valencia on Lemon rootstock that were killed to the bank in the Winter 1957-58 will harvest a box of fruit per tree from the 1960 bloom.

"Normally shy bearing Valencia on Cleo rootstock have excellent foliage and a heavy crop of uniform fruit from the 1960 bloom.

"In 1960 all trees have received at least two (2) **Ferti-Foliage** supplements at the rate of fifty (50) pounds per five hundred (500) gallon tank in the regular nutritional and pesticide sprays; poor fruiting varieties received three (3) applications of **Ferti-Foliage** and non bearing trees have been sprayed with **Ferti-Foliage** just prior to each growth flush.

"Our results from the use of **Ferti-Foliage** are: 1. A profitable foliar spray supplement that is compatible with most citrus sprays. 2. Decreased time from setting young trees to profitable production. 3. Better tree condition. 4. Increased yields. 5. Better external and internal quality. 6. Earlier fruit maturity."

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Curtail Crop Damages *(Continued from Page 11)*

from the standpoint of disease control. For certain soil-borne diseases, such as wilt of watermelons, this is the only method of control except where resistant varieties or strains of plants have been developed.

For combating insect pests, however, the value of crop rotation is less evident and probably less important. The reason for this is twofold.

Very few of the common crop pests are restricted to a single host. Some of the more destructive insects attack a wide variety of plants.

Moreover, most of these pests have strong migratory power and thus are able to find a crop wherever it is planted. Adults of some pests — such as the corn earworm, the fall armyworm, the velvetbean caterpillar, and the cotton leafworm — are strong fliers, capable of traveling long distances.

When an armyworm outbreak occurs in a pasture, the egg-laying moths may have originated in an adjoining field or on a neighboring farm. But it is nearly as likely that they came from the next county.

Rotation of crops obviously has some value in Florida. It is not, however, a dependable means of combating insect pests that attack our crops.

The location of a crop in relation to other crops and the interplanting of different crops can have considerable influence on insect problems. This is especially important with regards to pests that feed on many different hosts.

For example, the pumpkin bug or green stink bug feeds on most of the cultivated legumes. It also attacks many other vegetable and field crops.

Some of the worst outbreaks of this pest occur in places where a succession of plantings of small patches of various kinds of plants are made in the same area. These conditions provide the insects with a continuous abundance of food — and thus permit them to multiply at a phenomenal rate.

A different problem can arise when a new crop is planted near a mature or dying one. Some years ago, the writer observed a field of flue-cured tobacco almost completely destroyed by cutworms which had migrated to the tobacco from an adjacent lupine field.

Cover crops in citrus groves or pecan orchards can cause a somewhat different insect problem.

Various kinds of plant bugs breed on the cover crop. If the cover includes leguminous plants or citrons, these bugs may become extremely numerous.

If the cover crop is mowed at an inopportune time, the bugs go to the trees and feed on the maturing fruits, causing them to drop. This also happens when the cover crop begins to dry up or harden.

Similar trouble comes from mowing a cover crop that is heavily infested with grasshoppers. Under these circumstances, serious defoliation of the trees can occur — even though grasshoppers do not prefer citrus leaves if other food is available.

Normally, infestations start in two general ways. Adult insects may lay eggs on the plants or insects in various stages of growth may move to the plants to feed and continue their development.

Obviously, it is desirable to cut off these potential infestations at their source whenever possible. Sanitary measures will pay dividends in the long run.

Insects on plant remains left in the field after harvest are a serious menace to plants in neighboring fields and to future crops. This problem is most acute with regards to vegetable crops and their pests. It can be of considerable importance, also, in field crops.

An excellent example of this host-pest relationship is found in Dade County where potatoes and

(Continued on Page 20)

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Doyle Conner

Commissioner Conner Looks to the Future

By FRANK W. RISHER
Assistant Commissioner of Agriculture

"To promote the welfare of the Florida farmer and protect the health of the Florida consumer" is the primary objective of the Florida Department of Agriculture. This will be the theme of Doyle Conner's administration.

Florida farmers are superb producers. The science of marketing, however, has not developed at the same pace as that of production.

Consequently, Commissioner Conner plans to put additional emphasis on marketing Florida farm and grove products. Toward this end, a Marketing Institute is planned to be inaugurated in the future.

Market Institute members will come from each segment of Florida agriculture. They will come from the citrus, the vegetable, the poul-

(Continued on Page 35)

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Curtail Crop Damages *(Continued from Page 18)*

tomatoes are found in the same area. Both crops there are attacked by the green peach aphid.

Potato fields sometimes become infested with aphids when the crop is nearing maturity. Under these circumstances, the grower may decide that the aphids will not seriously affect the yield. So he simply ignores them.

Trouble, however, comes a little later – when the potatoes are harvested and the aphids scatter over the countryside. It comes when some of the migrating aphids alight in tomato fields and start new infestations there.

Of course, it takes time for the aphids to build up a large population and the tomato grower can use an insecticide to control them. Unfortunately, though, this often does not prevent serious crop damage. Aphids need to feed only a few minutes to transmit virus diseases from one plant to another.

Virus diseases frequently cause severe losses in tomatoes. This could be greatly reduced by controlling aphids in potato fields before they have time to migrate.

Even though only a few insects may be in a field at harvest, they can build up quickly if the plants are allowed to grow. Systematic destruction of crop residues immediately after harvest – by plowing them under or by thorough disking – will destroy many pests and help to reduce the need for insecticidal control.

Weeds growing around the borders of fields or along canals and ditch banks often serve as a reservoir for such crop pests as aphids, plant bugs, leaf miners, and various caterpillars.

The obvious solution to this problem is weed control. This, however, is not always possible.

In these situations, it often will pay the grower to spray or dust the adjacent weeds at the time he applies insecticides to the crop. By doing this, he will delay or prevent infestation of the crop and thus avoid the necessity of making so many insecticide applications.

Effective application of crop management practices as a means of controlling insects is largely dependent on a thorough knowledge of the life histories, seasonal occurrences, habits, and host relationships of the pests against which the control measures are used.

Management practices may never suffice as the sole or principle method of dealing with crop pests. But they can serve as a very valuable aid to control with pesticides.

Time, effort, and resources devoted to research on the biological relationships of our troublesome insects and mites will yield a profitable return. Information thus gained will be of great value to Florida agriculture for it will enable farmers to protect their crops more effectively than now is possible.

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Cutting Machinery Costs *(Continued from Page 15)*

gallon of diesel fuel per horsepower hour of operation.

Related costs often are neglected when we consider purchasing a piece of farm equipment. There are four factors (italicized) to be considered here:

Costs of associated equipment: If we're thinking of buying a corn picker-sheller rather than a corn picker, we must consider that a number of pieces of companion equipment are needed in addition to the picker-sheller.

Diverse use of equipment: A hay baler, for example, does only one job whereas a hay chopper and its companion equipment may be used to put up silage.

Time and labor: In modern-day machinery, it is easy to replace labor with machinery. Yet, the question is "will it always be to our financial advantage to replace labor with machinery?"

It takes less time to plow a field with a four-row, rather than a two-row, cultivator. We should, however, make certain that we need to eliminate this extra time consumption.

Another example is when we purchase equipment for convenience. We may select power steering on a tractor when we could do the job just as well with conventional type steering.

Quantity and quality of crop produced: The machinery you use may have an effect on yields. A pull-type combine—which may harvest only 75% because of shattering or a hay rake that shakes off many of the leaves—may cost less to own and operate. But since most of the feed value is in the leaves, it is wise to pay a little more for equipment that moves the leaves gently.

Machinery that lets you get the job done with minimum weather risks must pay for itself in one season. Because of these related costs, many farmers prefer to use the returns per dollar spent (rather than the amount of their costs) as a guide to the machinery they can profitably own.

We can cut machinery costs by reducing our ownership and operating costs. In the long run, our biggest savings can be made by cutting or reducing the former costs.

Cutting ownership costs requires long-range planning. Maintaining farm records is the most accurate means of seeing just where we're at in our farm expense and expenditures.

Ownership costs are a big part of the total cost of a machine. Six items to consider in reducing ownership costs are:

... Use machines more hours—enlarge your farm to fit your present machine inventory or sell your excess machinery to a point where it will fit your farm.

... Hire more custom work if your farm is not large enough to own a particular machine.

... Purchase a machine with the idea of doing custom work for others.

... Make a wise choice of new machines.

... Own expensive machines jointly with neighbors.

... Trade with neighbors the use of machines with low annual use.

Cutting operating costs: Texas farmers in 1957 spent more than $74 million on farm machinery repair. The average repair bill for the tractor and other machinery amounted to $206 per farm per year.

Many commercial farms have an annual farm machinery expense of $5,000. A 20% reduction in this would mean a profit of $1,000 annually. Listed below are some of the means for reducing your farm machinery expenses:

Initiation and operation of *a good preventive maintenance program* can substantially reduce machinery maintenance costs. This has been proven in 4-H tractor maintenance programs; they have records to prove their results.

The 4-H program involves keeping machinery in good adjustment,

(Continued on Page 27)

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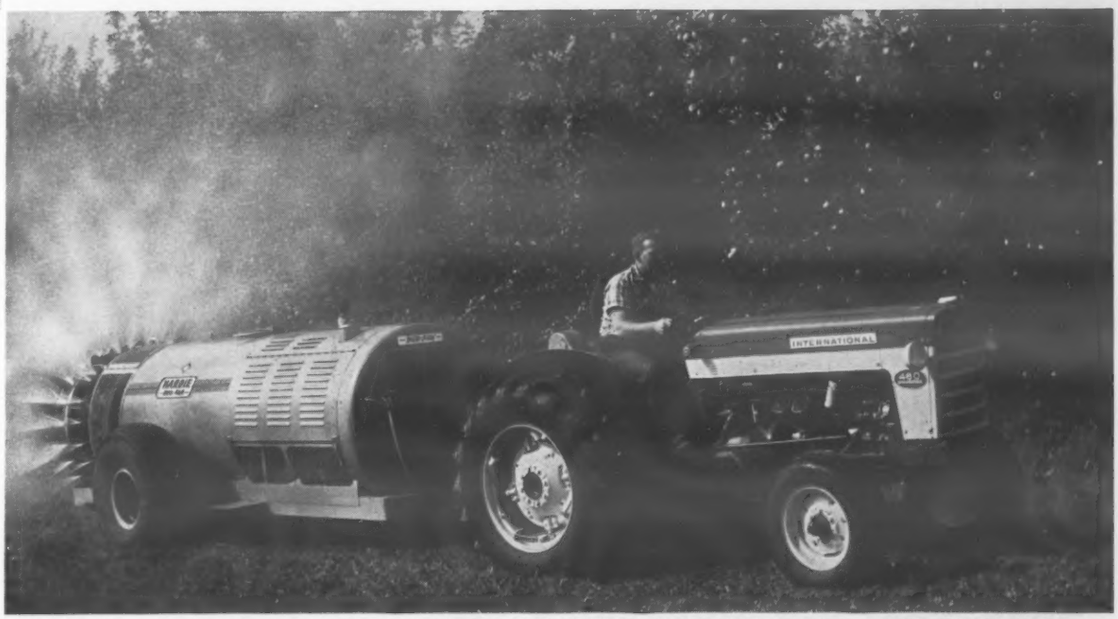

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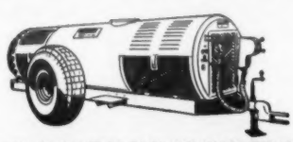

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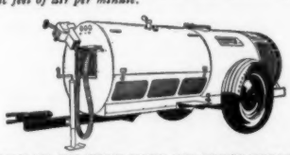

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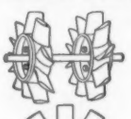

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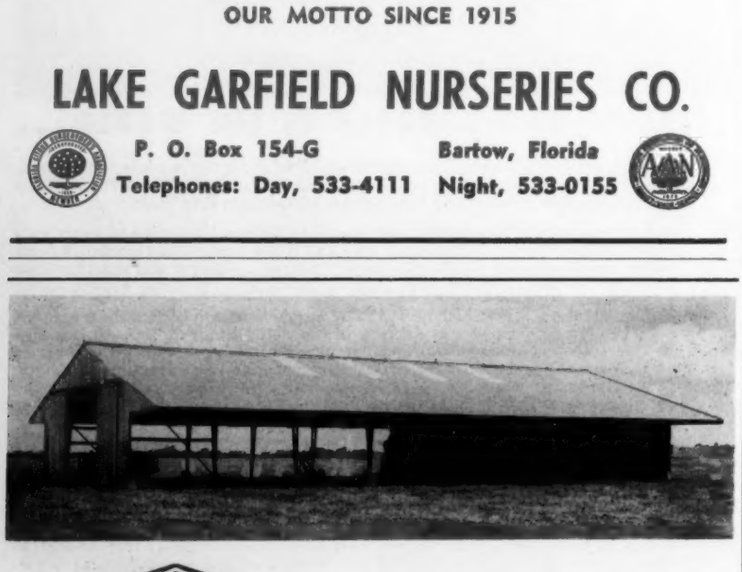

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Citrus Pest Control *(Continued from Page 16)*

Zineb-sulfur mixtures: Sulfur at 5.0 pounds per 100 gallon may be used in zineb sprays to improve the initial kill of rust mite.

Thus, zineb-sulfur mixtures are superior to zineb where rust mites are numerous. They are also useful where Brevipalpus and broad mites are added problems.

Chlorobenzilate at 0.5 to 1.0 pound of wettable powder or 0.5 to 1.0 pint of the liquid formulation is an effective rust mite miticide, but does not give as long control as zineb. It is preferable to zineb where copper is used and where rust mites are numerous.

The higher dosage of Chlorobenzilate is desirable only in March and early April. Either dosage may be used with oil and other materials used on citrus.

The use of sulfur should be kept to a minimum because it increases citrus red mite populations. Also, repeated applications or excessive amounts increase the number of purple and Florida red scales.

However, the dosage of 5.0 pounds of wettable sulfur per 100 gallon is useful in post-bloom sprays that contain copper, as a supplement to zineb where rust mites are numerous, in extra sprays for rust mite control between the post-bloom and summer applications, and where Brevipalpus mites and broad mite are also a problem.

Early post-bloom applications of sulfur, however, usually have to be repeated in May or June.

Combination miticides: Trithion and Ethion are sometimes useful in post-bloom sprays where both spider mite and rust mite control is desired.

Both materials are similar to sulfur in effectiveness against rust mite. They should be combined with zineb where longer control is desired.

Trithion and Ethion should not be used with oil. They may be used with other materials, however.

Use of Ethion is restricted to two applications a year. Both materials should be used in the post-bloom spray at the dosage of ¾ pint or 1.5 pounds per 100 gallon.

Kelthane is not as satisfactory as Trithion or Ethion. It should be used with zineb. Like Trithion and Ethion, Kelthane is of value for combined mite control in extra pre-summer applications where only a short period of control is required.

Two Brevipalpus mites occasionally occur on Florida citrus. One of these is associated with leprosis or nail head rust.

Neither the mites nor leprosis are a general problem. Both, however, have occurred in a few groves.

Control measures are desirable in groves with a history of leprosis—particularly where sulfur was not used in a dormant spray.

Zineb does not control Brevipalpus mites, but sulfur is excellent. Chlorobenzilate is also reported to be excellent, but has not been tested under Florida conditions.

Broad mite occurs occasionally and causes an injury similar to russet produced by rust mite.

Broad mite does not occur every year. It is usually only a spring problem on fruit about an inch or less in diameter, and is usually con-

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fined to groves on low land or adjoining wet areas.

Groves in such areas and those with a history of broad mite injury should receive a post-bloom application of sulfur.

Zineb does not control this mite.

Scale, mealybugs, whitefly: It is often a question of whether a post-bloom scalicide is justified when trees have very few scales on them.

Purple scale is now of minor importance in most groves. Yet there are other insects that may cause considerable damage.

The addition of a scalicide to the post-bloom spray should be considered inexpensive insurance against scale insects, mealybug and whitefly.

A post-bloom scalicide is definitely in order where there is a noticeable carry-over of red scale because this scale will infest fruit soon after it has set. If the scales are allowed to accumulate on the fruit, poor control may result from the summer scalicide and necessitate a fall application.

Tangerines should definitely receive a post-bloom scalicide to keep the fruit free of chaff and purple scale. Both of these scales cause an injury on the fruit that will not degreen, even in the coloring room. These green spots are a grade-lowering factor.

Temples, early varieties of oranges, and grapefruit should also receive a scalicide where either chaff or purple scale is present.

A whitefly infestation can be substantially reduced with a post-bloom scalicide. Sooty mold should not be a problem if the spring infestation of whitefly is reduced to a minimum and the summer scalicide is applied after the summer brood of adult whitefly has deposited eggs.

Scalicides should be thoroughly applied before the young scales move to the fruit. Where mealybug control is needed, it is especially important to spray before the calyx fits close to the fruit because sprays do not contact mealybugs under a tight calyx.

Several scalicides and combinations can be used. Each one has advantages and disadvantages.

Parathion or malathion are both effective, much safer than oil as far as the tree is concerned. They are recommended in preference to oil during the post-bloom period.

These materials are not so likely to cause leaf drop or drop young fruit. They may be used with neutral compounds of zinc, copper, and manganese as well as borax, lead arsenate, and all miticides except Trithion and Ethion.

Neither parathion nor malathion will control spider mites or rust mite.

Use 0.25 pound of actual parathion per 100 gallon or 1 to 1.5 pounds of malathion. Where fruit is present, do not apply parathion within 14 days of harvest or malathion within 7 days of harvest.

(Continued on Page 30)

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By BARBARA CLENDINEN

IT'S THE FAMILY'S favorite story.

And it goes like this.

Once upon a time, Mamma (that's you know who) was having 12 people to dinner. She rushed around scouring the brass and polishing the silver and congealing salads in rosy rings. She made a great pouf of dessert, all whipped cream and angelfood cake and nuts. And she spent hours concocting an Oriental chicken dish, jeweled with fruits and subtle with spice.

Then, of course, there were the bathrooms to clean and the Flowers to Fix for the Table. (Flower-Fixing isn't treated lightly around our house and you'll soon see why.)

With all this to do, she naturally couldn't make it to Garden Club that morning. So an obliging friend stopped by after the meeting to regale her with what went on. By this time, Mamma was at the Flower-Fixing stage and she perspired and breathed heavily as she strove to make back-yard roses look like a suave bouquet.

Seems that the program at the Garden Club had been the county's finest flower arranger, who had given an illustrated lecture on achieving artistic effects with one's own blossoms.

"My!" said the obligingly friend regretfully, watching Mamma frantically wedge flower stems every which way, "*You should have been there!*"

This searing experience took place several years ago and I've learned a thing or three since then. Most important of my findings: never let a friend in the door when you're Fixing Flowers. Then there are general nuggets like these, which have lightened my burden.

It's harder to go wrong (still possible at my house, of course) if you begin your arrangement with a definite design in mind. First establish the height and width with foliage and flowers, then fill in the center with your biggest blooms.

MARVELOUS FOAM MATERIAL, which secures flowers like mad and holds 30 times its weight in water, is the Flower-Fixer's greatest joy.

Flowers arranged in a circular pattern are enchanting, and monotony can be avoided by the use of pointed foliage to contrast with the round flower shapes.

Have at least four basic containers and learn to work with them all. Best are: a low, round bowl; a shallow, rectangular one; a tall, rectangular or pillow vase, and a tall, columnar vase. Remember with a tall vase, never let flowers extend more than 1½ or 2 times the height of the container. 'Til I learned this, I created some giants that frightened the neighborhood.

As you progress in Flower-Fixing ease, you'll work into using hurricane lamps, bottles, cake stands and anything that comes to hand. The head of our house drew a firm line when he found me putting button daisies in his camera case. I guess there *are* limits to how far we should go.

Greatest joy in the life of Flower-Fixers is that marvelous foam material which holds 30 times its own weight in water and secures the flowers like mad. In addition to it, you should have a really sharp knife or flower shears, florists' tape, and a rubber bottle with a spray cap to send a mist of water over a completed arrangement, keeping it fresh and cool for a longer time.

Tiny tricks that work well:

Lengthen a too-short stem with an extra piece of stem bound on with tape. Be sure to leave the original stem end free to absorb water.

Camouflage cuts you must make on branches by rubbing a piece of the clipped branch over the cut surface. Enough bark dye comes off to make the cut inconspicuous.

When hollow-stemmed flowers, as zinnias and chrysanthemums, begin to droop, snap them back by plunging the sharply pointed tip of an ordinary toothpick straight through the middle of the flower down into the stem as far as possible. Be careful not to let the pick pierce the stem covering.

When searing the stems of poinsettias, zinnias, hydrangeas, or dahlias after cutting, protect the leaves and flowers by thrusting stem ends through tissue paper and holding the paper around them so that no steam can reach the blooms.

Condition flowers by placing them in deep, warm (never cool or cold) water immediately after cutting and leave them at least an hour or two. When adding water to an arrangement, be sure it is tepid.

Scrub containers with soapy water to banish decay germs that hasten wilt, then rinse to remove all traces of soap.

Not hard, is it? That's what I keep telling myself. And every arrangement comes a little easier.

Scale Furniture to Fit House

PROPORTION IS ALL-IMPORTANT, whether it's a pretty girl, a landscaping job or the furnishing of a retired couple's house.

Here in sunny Florida, many homebuilders or buyers are couples who've raised their families and seen them establish their own homes, then closed the door for the last time on large, family-size houses they no longer need.

Half the trick of attractive, effective decor in these smaller homes is the scale of the furniture. The giant four-poster that fitted handsomely into the master bedroom of the old house dwarfs the sleeping quarters of an open-to-sun-and-sky Florida house. The breakfront and credenza that displayed bric-a-brac and housed china in the stately dining room of the old house are overpowering in the new.

A clean break with the past is dictated. Cling to prints, books, lamps, accessories, small tables and the best loved of comfortable chairs. Give or sell the heavy pieces to the younger members of the family or young friends whose houses are spacious enough for this generation of children.

A better balance of architecture and furniture will be achieved and a more comfortable, attractive effect will follow.

YARD & GARDEN

By Marguerite Schwaen

Week-end gardeners who depend on azaleas and camellias as the backbone of their foundation plantings and borders should keep adding to their inventories of low-flowering "companion plants." In this category are spring, summer, and fall-flowering bulbs, as well as begonias and low-growing border shrubs. Used properly, low clusters of these colorful plants will unify and complement an otherwise sparse collection of evergreens.

Companion plants must meet certain cultural requirements in addition to low growth. For one thing, since the shrubs they enhance are shallow-rooted and cannot survive the root-ripping action of cultivation or hoe, they must thrive without constant cultivation.

Too, they must be at home in lime-free soil. And they should be able to tolerate varying degrees of shade.

At home in this environment are the fibrous-rooted begonias, the common bedding kind, and the hardier rex begonias. The latter are crosses or hybrids of other ornamental species and varieties. Because of their beautiful leaves – variously marked with spots, colored bands, and metallic shadings – the rex begonias are favorites as low-growing budding plants.

Rooting a leaf cutting of a rex begonia is a really thrilling experience as a single leaf will sometimes produce half a dozen or more plants.

For rooting purposes, select a mature leaf from a plant with a strong main vein running through it. Cut through the lead-off veins about 1½ inches from the main vein. This done, place the leaf flat on moist soil or sand.

It is essential that the leaf and vein cuts remain in constant contact with the rooting medium. (This may be accomplished by securing the leaf flat against the earth with small stones.) Also, the soil must be kept moist.

New plants will form on the surface of the pinned-down leaf cuttings and take root in the soil. As soon as the small new plants have made firm roots, they can be separated from the leaf and potted until they are large enough to be placed in the plant border.

Begonias come from moist, hot forests. Consequently, they thrive best under conditions that approximate their native habitat. Many will nevertheless tolerate a mild, reasonably moist condition suited to azalea culture. These begonias will make good growth and fine foliage.

When in active growth, all begonias are fine feeders. But when growth stops and they take a short rest, feeding should be eliminated and very little water provided.

Another low-growing plant that makes an attractive shrub border is the malpighia. Seemingly indifferent to soil, this plant enjoys only periodic popularity. Each time it returns to favor, however, it recruits new converts to its dainty leaves and flowers.

Due to its resemblance to holly, this plant is commonly called "dwarf holly." Although it can claim no botanical relationship, it can be trimmed and shaped like holly. The malpighia's miniature spiney leaves are dark green, waxy, and ornamental.

The tuberous-rooted, tropical vines of the Gloriosa Superba and Gloriosa Rothchildiana may be grown in azalea beds also. There's no danger that their weak, sparse vines will have a smothering effect.

Brilliant red and yellow flowers of these vines will bloom among the leaves of their hosts, appearing like blossoms on the shrubs, during the late summer and autumn. Then the vines die back and lay dormant during the azalea blooming season.

Taste-Tempting Treats

By LORA A. KISER

Party food that's pretty and piquantly flavored is every host's target. You can bull's-eye at Valentine or early spring fetes with these taste-teasers that are also kindhearted calorie-wise.

One of the best appetizers at any season is Florida's luscious shrimp. Marinated in a lime-sharp, garlic-rich blend, they're magnificent.

Deviled ham is the base of another weight-watcher's joy. Blended with cottage cheese and onion into bite-sized marbles, it makes a melting mouthful.

Hearts are trumps at Valentine parties and so are chicken salad sandwiches . . . when spread open face on rounds of bread, then topped with heart cut-outs of jellied cranberry sauce. And I'll share a cranberry fruit punch recipe that's guaranteed to form a double line at any punch bowl.

Marvelous on any hors d'oeuvres tray are miniature frankfurter rolls, stuffed with a savory sour cream-tuna blend. And never a scrap is left of a tuna-cheese dip that's teasingly different from most you encounter.

So clip these for easier party giving.

Shrimp Piquante

Boil and de-vein shrimp. Make up a marinade of ¼ cup salad oil, ½ cup lime juice, ½ cup water, 1 clove garlic (crushed), a bay leaf, and 6 whole cloves. Let shrimp stand in this 4-6 hours in refrigerator. To serve, drain, spear with cocktail toothpicks and arrange on bed of crisp parsley.

Ham Balls

Mash two cans deviled ham with fork. Blend in 1 teaspoon grated onion and ½ cup cottage cheese. Form into small balls, roll in finely chopped parsley. Chill until serving time.

Heart-Topped Chicken Sandwiches

Cut white or whole wheat bread into finger-shaped pieces or rounds; butter and spread with fine chicken salad mixture. Using hors d'oeuvre heart-shaped cutter, cut small hearts from ½-inch slice of jellied cranberry sauce. Place a cranberry heart atop each sandwich to serve. Garnish with chopped parsley.

Cranberry Fruit Punch

6 pints cranberry juice cocktail
1½ quarts orange juice (12 oranges)
2½ cups lemon juice (12 lemons)
3 cups pineapple juice
3 cups sugar
1½ quarts water

Combine cranberry cocktail and the juices; mix well with sugar and

(Continued on Page 26)

A luscious banana cake, whisked together with magic mixes, climaxes a casserole supper delightfully To achieve this artful creation, first bake yellow cake mix in two 9" pans as directed on package. Split each layer, making 4 layers.

Next step: Add 2 cups *dry* creamy white frosting mix, ½ cup ripe mashed bananas, and 1 teaspoon lemon juice to 1½ cups whipping cream for filling. Chill. Whip. Put between layers.

Make thin icing by blending rest of dry frosting mix, 2 to 3 tablespoons hot water, and 1 tablespoon light corn syrup. Beat until smooth; add 1 to 2 teaspoons more water, if necessary. Pour and spread thin icing over top of cake, let dribble down sides. Serve cake chilled. Serves 12.

For fun: Dip banana slices in lemon juice, drain *well* on absorbent paper. Sprinkle with nutmeg and garnish top of cake just before serving.

Taste-Tempting Treats *(Continued from Page 25)*

water. Serve in punch bowl over crushed ice or ice cubes. Makes 50 servings (½ cup each).

* * *

Sour Cream-Tuna Rolls

1 can (6½ or 7 oz.) tuna, drained and flaked
⅓ cup sour cream
¼ cup chopped celery
1 tablespoon grated onion
¼ teaspoon horseradish
2 teaspoons prepared mustard
¼ teaspoon salt
Dash pepper
Butter
1½ dozen miniature rolls (frankfurter or Parkerhouse)

Combine all ingredients except rolls and butter; mix well. Split rolls partially and spread with butter, then fill with tuna mixture. Garnish with sliced stuffed olives or parsley.

* * *

Tuna-Cheese Dip

2 (3 oz.) packages cream cheese
5 tablespoons milk
1 can (6½ or 7 oz.) tuna, drained and flaked
¼ teaspoon salt
Dash pepper
1 teaspoon Worcestershire sauce
2 teaspoons grated onion
6 drops Tobasco
Potato chips

Soften cream cheese with fork; beat in milk until fluffy. Add remaining ingredients except potato chips; beat until well blended. Turn into serving dish, sprinkle with paprika and surround with potato chips. Makes 1½ cups dip.

* * *

BEST RECIPE of the MONTH

FEBRUARY'S FESTIVAL TIME in Florida. So, to make the busy homemaker's visit to her community fair more carefree, we asked for easy-does-it entries in this month's contest. And that's exactly what we received, as you will see below.

Simple but savory is the recipe for Veal Birds Casserole which captured our $5 first prize for W. O. Long of 2030 - 43rd Street South, St. Petersburg. Prunes are the surprise ingredients in this.

We can't tell from the signature whether the sender is a homemaker or a bright batchelor cook, but we're intrigued by the recipe.

Veal Birds Casserole

For each serving, wrap 2 uncooked, pitted prunes in very thin slices of uncooked veal. Skewer with toothpicks and tie with string. Salt and pepper, then place in greased casserole.

Add 1½ cups clear chicken broth and cover. Bake at 350° until tender, about 45 minutes to 1 hour.

Serve with sour cream and paprika, buttered garlic noodles, and a tossed salad of greens and tomato wedges.

(Editor's Note: We'd like the sour cream stirred into the hot broth just before removing from the oven, then sprinkled with paprika and chopped parsley.

* * *

A quickly-made spaghetti and beef casserole that eliminates the long cooking essential to the traditional dish won the $2 second prize for Mrs. J. J. Deavitt of Orlando.

Mrs. Deavitt goes through the first steps of a regular spaghetti sauce, then combines the sauce with cooked spaghetti for a cheese-topped 30-minute oven period. The entire casserole takes less than an hour and is excellent.

April's the time to deck the table with spring blossoms, try that new congealed salad, and invite friends to luncheon.

We're curious about the foods you find most fun to serve when you have "the girls" to lunch. Tell us your favorites for our April issue—we'll swap you a crisp $5 bill for the best.

Best Recipes
FLORIDA GROWER & RANCHER
P. O. Box 2350
Tampa, Fla.

Second prize is $2. Honorable mention wins a three-year subscription for yourself or a friend.

Oven Spaghetti Casserole

¾ cup onion, minced
1 cup green pepper, minced
1 8-ounce can mushrooms
3 tablespoons butter or margarine, melted
1 pound ground beef
8-ounce package spaghetti
2 teaspoons salt
1½ teaspoons sugar
3½ cups cooked tomatoes, cut into small pieces
6 pieces bacon, fried crisp

Saute onion, green pepper, and mushrooms in butter until onions are yellow. Add ground beef and cook until brown. Add salt, sugar and tomatoes; simmer while cooking spaghetti.

Cook spaghetti as directed on package; drain; combine with meat mixture. Pour into well-greased 2-quart baking dish; sprinkle with grated cheese. Bake in 350° oven 30 minutes.

Serve hot, garnished with crumbled bacon. Serves 8.

* * *

Mrs. Roy Pugh of Lakeland transforms the prosy crookneck squash into a richly-flavored casserole. For this wizardry, she'll receive a three-year subscription, mailed to her own address or to that of a friend.

Squash Casserole

15 small yellow crookneck squash
3 tablespoons margarine or butter
½ cup chopped onion
½ cup chopped celery
½ cup minced green pepper
⅛ teaspoon oregano (optional)
1 can cream of mushroom soup
1 teaspoon salt
⅛ teaspoon pepper
½ cup fine cracker crumbs
⅛ teaspoon paprika

Cut unpeeled squash into pieces, cook in small amount of salted, boiling water 15 minutes or until tender. Drain and set to one side.

Melt margarine. Add onion, celery, green pepper, and oregano; cook until tender.

Place layer of squash in buttered casserole, top with onion-pepper mixture. Alternate layers until casserole is filled. Add can of soup, salt, and pepper; sprinkle with paprika and cracker crumbs.

Bake at 350° until golden brown.

* * *

SHORT CUTS

(We pay $1 for each Short Cut published.)

Old nylon stockings make wonderful polishing cloths for mirrors and windows. And they cost nothing! Save your old ones, dampen them and rub the mirror briskly. You'll get a high shine in an instant. *Mrs. V. I. G., N. Miami Beach, Fla.*

* * *

For a quick and delectable hot drink, serve rich, steaming hot cocoa and pass a bowl of soft, butter mints. Each guest can drop one or two mints in his cup, stir and the mint will dissolve to add piquant flavor. *Mrs. G. W. M., Mansfield, Ohio.*

* * *

Keep a fine hairnet in your purse to slip on when shopping for a dress. Your hair won't be wrecked and your disposition will profit. *Mrs. E. M., Bradenton, Fla.*

Plentiful Foods for February

Although short on days, February will be long on opportunities to serve patron-pleasing meals, according to the Food Distribution Division of the USDA's Agricultural Marketing Service.

Such plentiful foods as cabbage, onions, and rice will help to keep costs down—especially when enhanced by touches of peanuts and peanut products, canned ripe olives, and cranberry products.

SEWING CORNER

For Sun-Fun!

What a well-clad little sun-lover you'll have in these gay separates! There are four mix-and-match items in the pattern: an overblouse, an appliqued bodice, shorts, and pedal-pushers.

Buy matching prints and solids and three-eighths of a yard of contrasting stripe for the bodice. You'll sew speedily and spend little.

Printed Pattern 9074: children's sizes 2, 4, 6, 8. Size 6 shorts, ⅞ yard; bodice ¾ yard.

Send 50 cents in coins; add 10 cents if you wish first class mailing. Send to:

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Cutting Machinery Costs *(Continued from Page 21)*

regular periods of service and lubrication, and carrying out preventive maintenance practices. The operator's manual is the best guide for each piece of machinery or equipment.

Lubrication costs may rise when you start a good preventive maintenance program. This cost, however, will be offset by substantially lowering your repair bills.

Fuels cost Texas farmers over $100 million in 1957, for an average of $410 per farm. You can cut cost of fuels in three ways:

... Be sure the carburetor is properly adjusted; faulty carburetor adjustment accounts for 10% of all fuels burned on the farm.

... Do not operate equipment that is out of adjustment. Experts estimate that 75% of all farm machinery is operated out of adjustment; the net result is use of more fuel.

... Prevent fuel evaporation: University of Missouri tests show about 3% fuel loss by evaporation from red, unshaded storage tanks. When painted white, shaded, and a pressure vent cap is added, the loss is a fraction of 1%.

Florida agriculture is becoming highly mechanized day by day. Our progress in the future depends on how well the farmer is able to adjust this particular phase—farm machinery automation—into the whole farm operation program.

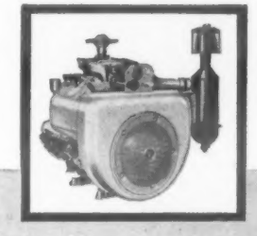
The rise in cost of farm machinery is higher, in proportion, than the increase in the price of farm commodities. Therefore we must partially offset this by a well-balanced farm machinery maintenance program.

By concentrating on two general areas leading to a more efficient farming operation, Florida farmers can reduce excessive machinery costs. They can do this by:

... Setting up a planned system of machinery procurement and replacement that is completely integrated with the most efficient production methods and products—and by

... Following a planned system (*based upon the operator's manual*) of preventive maintenance, adjustment, and repair, and by keeping maintenance records on each machine.

bales 10,500 tons of hay in blazing 115° heat—



yet "not one of my WISCONSINS missed a lick all summer"

— says Ray F. Claybrook

ONE OF TWO Wisconsin-powered Freeman balers used by Mr. Claybrook, of Holtville, Calif. The 30-hp VH4D Wisconsin has electric starting, and is equipped with Stellite exhaust valves and inserts plus positive rotators which extend valve life up to 500%.

"And," Mr. Claybrook adds, "the engines produced on schedule all season without a change of spark plugs or points." This takes in sun-up to sun-down haying on 2,750 acres in the Imperial Valley of California, known to be the hottest spot in the country.

"In the past I've had lots of engines with radiators," he explains. "But since I got my first Wisconsin air-cooled engine, I haven't looked at a water-cooled unit." Here's why: "Thank goodness those days of packing water in the field for radiators are over! I'm sure glad to be able to do my baling and not have to worry about fan belts, radiators, and water."

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HIGHWAY EQUIPMENT & SUPPLY CO., 1016 West Church Street, Orlando, Florida
INDUSTRIAL SUPPLY CORPORATION, 1800 2nd Avenue, Tampa, Florida

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FOR SALE — 7100 Valencias-RL; 3900 Pineapple-RL; 2100 Hamlins-SO; 1500 Pineapples-SO. All ½" up and disease free. Entire lot $12,000 or $1.00 each. N. A. DOUBERLEY, Box 12, Dundee, Florida. Phone—Winter Haven — CYpress 3-2654 or Haines City — HAmilton 2-2882.

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(Continued on Page 29)

FLORIDA FARM MARKET

(Continued from Page 28)

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ATTENTION! — Citrus Growers. Don't burn up those seedling trees. We buy seedling orangewood. Highest prices paid. Call or write — FLORIDA ORANGEWOOD CORP. 1527 LaSalle Street, Tampa, Florida. Phone 88-9421.

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Light on Pullets

(Continued from Page 12)

ing the year. They benefit both light and heavy breeds.

If lights are supplementing natural daylight, the bulbs should provide 1 watt per bird. Bulbs should supply 2 watts for each bird if all light is artificial.

Pullets raised on either light schedule may be given a constant day in the laying house or provided weekly increases during the laying period.

King recommends birds on growing programs be full-fed.

USDA tests showed that birds getting too much light at too young an age come into production later. Also, these birds are inferior in general body and feather development to those getting just the right amount.

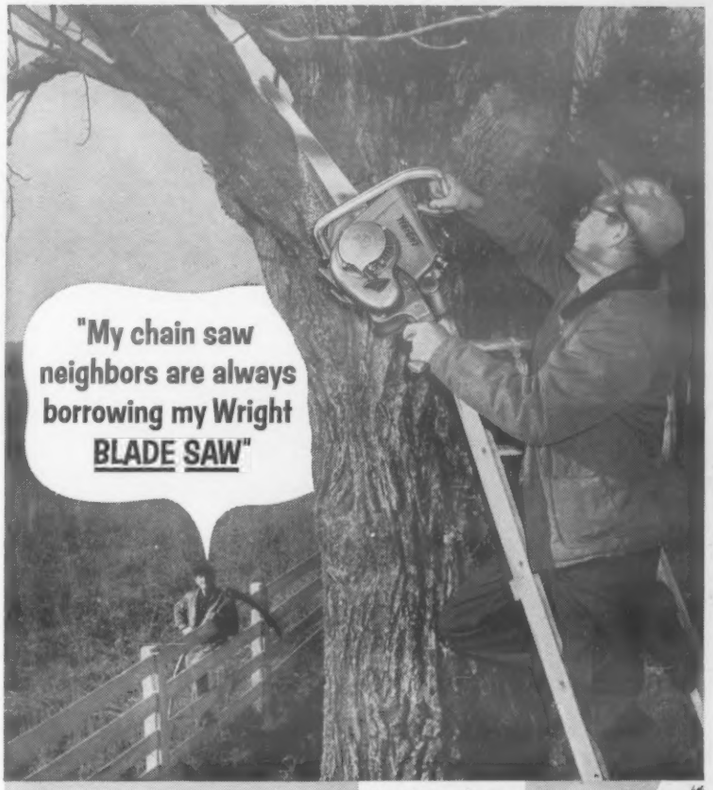
One group of white Leghorns daily got 16 hours light from birth to 14 weeks, then eight hours daily to 20 weeks. Reversing the treatment, ARS poultry husbandman R. W. Lowe gave a second group eight hours of light daily to 14 weeks, then 16 hours to 20 weeks.

Birds in the second group started laying the 17th week. At 20 weeks, they were laying at about 15% of ultimate capacity.

Chickens in the first group had smaller combs, coarser feathers, and were generally retarded sexually. They didn't start laying until 21 weeks.

In earlier tests at the Arizona station, Lowe exposed a group of 200 birds to 10½ hours (normally used) of daylight from birth to 20 weeks. Another group was exposed to 16 hours of light daily up to 20 weeks. Then both groups were placed on 14 hours of light daily.

The birds receiving 10½ hours of daylight matured about 10 days earlier. And they laid more eggs, averaging about four to five eggs more per bird.



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Rx for Ulcers

Learn to Live With Yourself

Try out this bit of philosophy on your next 'tummyache': "Even if I don't get everything done today, there will be a tomorrow. And if I'm not here tomorrow to take care of it, the world will still be here. So *somebody* will take care of things . . . probably better than I'm doing it today."

If a lot of people could adopt this sort of a viewpoint, they would live a lot better and easier. Too, they would have a lot less trouble with their ulcers – and with many other of their medical and emotional problems.

Stomach ulcers, as they're commonly called, cover several different conditions of the stomach and upper part of the small intestine. This first section of the intestine is known as the duodenum and is the most common site for ulcers to begin.

Most "stomach ulcers" are really "duodenal ulcers" and most of them them are not malignant. Cancer of the duodenum is very rare.

Ulcers of the stomach proper occur somewhat less frequently. Cancer here, however, is a much greater problem.

Even when recognized fairly early and properly treated, stomach cancer is a very serious condition. Worse still, it can masquerade as a common "stomach ulcer" with almost the same symptoms.

Although cancer of the stomach is more of a problem than cancer of the duodenum, actually a relatively small percentage of stomach ulcers are cancerous. The big point is that *no persistent stomach ache should be passed off casually* as "indigestion."

Duodenal and stomach ulcers are more likely to appear in young adulthood, mostly in men under 40. But they may occur at any age, from birth to very old age.

These ulcers are much less likely to appear in women before the menopause than in men of comparable age. Frequency of occurence in women after the menopause and in men of the same age group is about the same.

Symptoms of ulcers in both the stomach and the duodenum are very much the same. They include abdominal discomfort and pain, which is usually more severe when the stomach is empty.

Relief from the pain or the feeling of discomfort is obtained by taking food, milk, baking soda, or some other alkaline substance such as the various drugstore indigestion remedies.

Ulcer patients secrete more than a normal amount of acid in their stomachs; the relief comes because the food or medication neutralizes or dilutes the acid. Spasm of the stomach muscles also is a factor in this pain and when the excess acid is neutralized, the spasm often will be relieved.

Excessive belching may or may not be a symptom of ulcers. Highly seasoned, very hot or very cold, greasy, or rough foods may also initiate discomfort and pain.

When there are ulcers, nausea and vomiting may be present.

Complications which may arise from ulcers are hemorrhage and obstruction.

Hemorrhage or bleeding comes when the ulcer eats its way into a blood vessel. It is indicated when there is vomiting of blood or of a dark material looking something like coffee grounds, or by the passing of dark bowel movement. If the hemorrhage is small, there may be only the dark stool and no vomiting.

Obstruction is caused by scarring and swelling around the ulcer along with muscle spasm. This causes the intestine to close and block the passage of food. Nausea and vomiting result, and the person with an obstruction is unable to keep down anything he eats.

Bleeding or obstruction are emergency situations, calling for a quick trip – or a quick call – to your family doctor.

Treatment for ulcers includes the eating of soft, bland foods; the avoidance of greases, spices, and acid foods, and also medications to neutralize the excess acid and reduce muscle spasm. In severe cases, surgery is necessary.

A very important factor in treatment of ulcers is learning to live with oneself . . . to cast aside the tensions of modern living . . . to relax . . . to accept stress as it comes and not be overcome by it.

When you are under more than usual strain and feel as though the world is caving in on you, it's a very good idea to stop and relax for a few minutes, trying to think of nothing in particular – least of all of self and of problems related to self.

Citrus Pest Control *(Continued from Page 23)*

Oil sprays containing 1.3% actual oil are effective scalicides and also control spider mites. However they often cause leaf drop and drop of young fruit during dry weather or when there is a wind with low humidity.

Although neutral copper compounds may be used with oil, copper-oil sprays are not recommended. Such mixtures often result in fruit burn, leaf drop, poor disease control and increase the fall purple mite problem.

No more than one metallic compound should be used with an oil emulsion except that lead arsenate may be added to copper-oil on grapefruit.

Two scalicide mixtures are also satisfactory for post-bloom use. These are oil emulsion, 0.7% actual oil with either 0.15 pound of parathion per 100 gallon or with 0.5 to 0.75 pound of actual malathion.

The oil-parathion mixture may cause as much leaf drop as 1.3% oil. On the other hand, the oil-malathion mixture has been less harmful.

Formerly, not more than one oil spray per year was recommended. It is still advisable not to use a concentration of 1.3% oil more than once per year.

However, the reduced dosage of 0.5% to 0.7% oil combined with either parathion or malathion and applied post-bloom and summer has had no apparent effect on the trees and fruit color has been good.

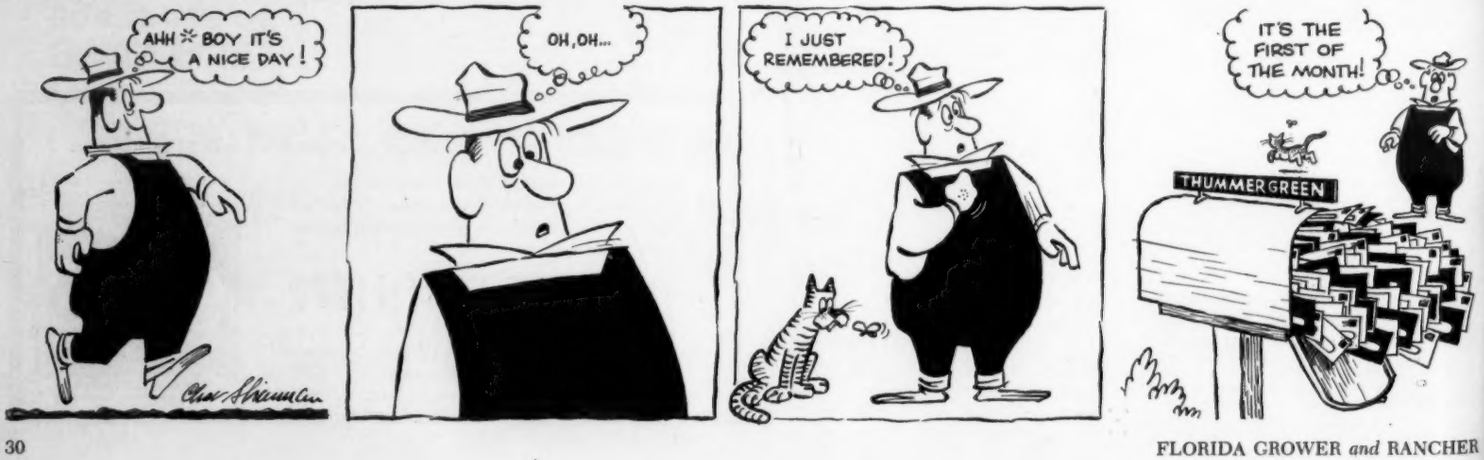
Oil, regardless of the concentration, is not recommended when the average size of fruit is between 0.75 and 1.25 inches in diameter because it may cause oil blotch in this size range.

Aphid control on young trees is important because maximum leaf growth is essential for fast growing trees.

Control measures should be taken before 10 to 15% of the trees are infested. This is done to prevent a high percentage of leaves from being curled.

(Continued on Page 33)

THUMMER GREEN – – **– – SHARMAN**



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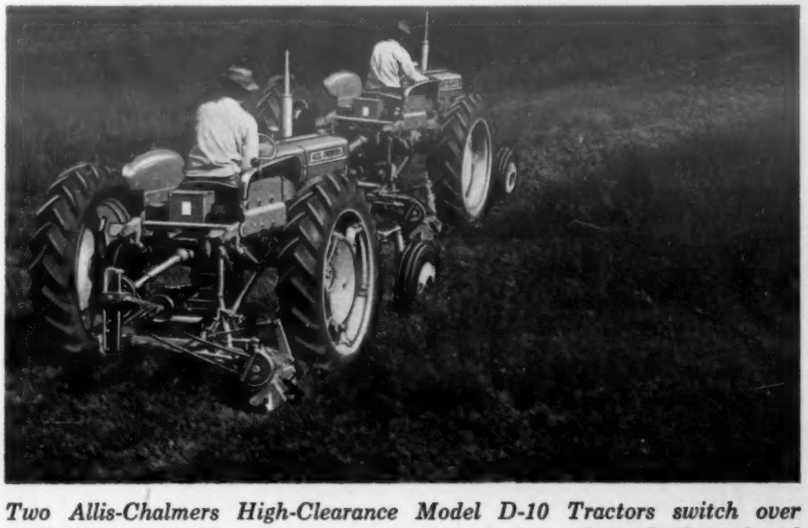

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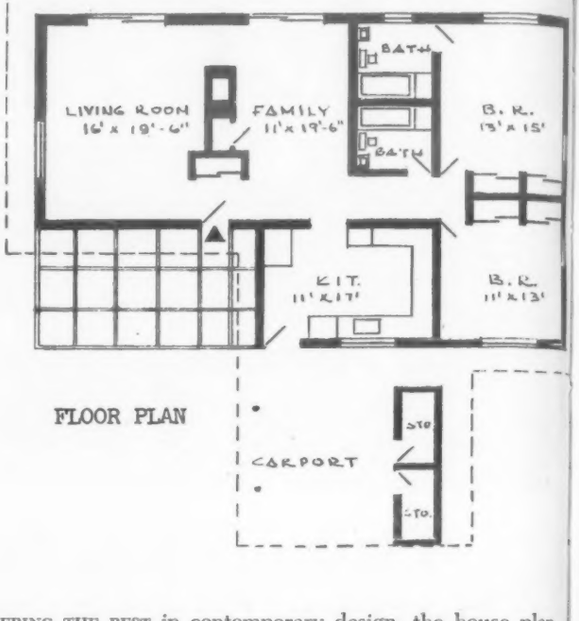


FLOOR PLAN

OFFERING THE BEST in contemporary design, the house plan shown here provides a maximum of living space in a small package. This two bedroom home is equipped with two full baths, a large living room, spacious family room, and a two-way fireplace that opens to both the living and family areas.

An open patio off the living room adds to the opportunity for outdoor living provided by Florida's climate.

For convenience, the kitchen adjoins the double carport. Yet the housewife can get to the bedroom area without going through the living room.

Note, too, that an abundance of storage space is provided.

If you are by now interested in getting more details about this house, see your local county agent or home demonstration agent. You may contact the writer also. Ask for *Florida House Plan 107*.

Florida's First Grapefruit

The first grapefruit in Florida was produced in 1823 by Count Odet Philippe, chief surgeon in Napoleon's navy. Settling at Safety Harbor on the west coast, he developed a citrus grove with trees and seeds from the West Indies.

Florida now produces 72% of the world's crop of this fruit.

Some people are no good at counting calories . . . and they have the figures to prove it.

GRAND ISLAND NURSERIES

Has a large selection of registered and non-registered standard and fancy citrus varieties on Cleo, lemon, sour and sweet orange rootstocks NOW AVAILABLE. **No finer citrus trees Grown Anywhere.** For Prices write or call—

FRANK OR JOHN KAUFFMAN
P. O. BOX 906 **EUSTIS, FLORIDA** **PHONE ELGIN 7-3638**

Citrus Pest Control *(Continued from Page 30)*

A second, and possibly a third, aphicide application may be necessary if new growth is slow in maturing.

Systox at one pint per 100 gallon is probably the most effective aphicide from the standpoint of residual effect.

Other insecticides that are effective include 0.5 pound of actual malathion per 100 gallon, 0.15 pound of actual parathion, and 1 pint of 40% nicotine sulfate plus a spreader.

Lindane and TEPP have aphicidal properties and should be used according to manufacturers' directions.

Spider mites: The usual post-bloom outbreak of citrus red mite (purple mite) and, to a lesser extent, Texas citrus mite can usually by prevented with 0.7 to 1.3% oil.

Other miticides such as Trithion and Ethion usually do not last from post-bloom until time to apply the summer scalicide. Kelthane is less effective than either Trithion or Ethion.

Although citrus red mite and Texas citrus mite will severely dull citrus foliage, it will rarely cause a severe leaf drop at this time of the year in healthy groves as long as soil moisture is extremely low.

Six-spotted mite may be controlled with materials used for purple mite, but more thorough coverage is needed for satisfactory results.

Residues and tolerances: The Federal Food and Drug Administration has established tolerances on amounts of certain pesticide residues that can remain on citrus fruits.

In order to produce fruit free of illegal residues, it is necessary to observe all restrictions such as waiting periods given on manufacturer's labels.

Consult the *1961 Better Fruit Program* or contact the Citrus Experiment Station at Lake Alfred or Fort Pierce.

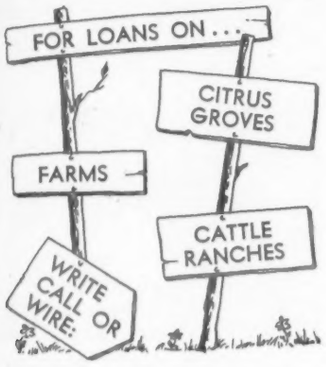
* * *

Risher Honored

FLORIDA'S No. 2 farm job, that of serving as Assistant Commissioner of Agriculture, was taken on last month by Frank W. Risher of Jacksonville. Since the new post was just created last year by the state legislature, Risher is the first Floridian to hold this highly responsible position.

Commissioner of Agriculture, Doyle Conner, in announcing the appointment, pointed out Risher is a specialist in marketing problems. He added he expects Risher to devise plans to step up the use and consumption of Florida's farm products.

Prior to assuming his new duties, Risher was assistant commissioner of the Florida State Marketing Bureau. A veteran of more than 48 years in the agricultural field, he has been associated with Florida farming for 31 years.



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FARM LOAN DEPARTMENT
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MINIMUM LOAN $15,000
Terms as long as 20 years

FOR BETTER TREES AND PLANTS
RELY ON PENNINGTON PRECISION MADE TENSIOMETERS

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SOIL MOISTURE

Now you can be certain of proper soil moisture balance. This reliable instrument tells at a glance when to irrigate. Eliminates guess work or costly soil sampling.

UP TO 24" $12.00 Each

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New & Used
Limited Supply Available
CALIFORNIA HEATER CO.
1511 West 2nd St. P.O. Box 957
Pomona, Calif.

TRIANGLE BRAND COPPER SULFATE

Still Your Most Dependable Fungicide

The new organic fungicides that have received so much publicity in the past few years may be superior to some of the older standard sprays **for certain isolated applications.** But it is well to remember that many of these new "miracle" sprays have yet to stand the test of time.

We suggest that unless the superiority of a new fungicide is conclusively proved by exhaustive tests under severe climatic conditions, it would be wise to stick with the dependable fungicides.

Seventy years of experience have demonstrated to farmers, orchardists and agronomists that copper sulfate fungicides, if properly formulated and applied, are completely dependable, chemically effective under a wide variety of conditions . . . and last but not least . . . **economically practical!**

Triangle Brand Copper Sulfate & Basic Copper Sulfate are recommended for controlling the following diseases:

Bitter Rot — Scab — Blotch — Fruit Spot — Black Rot
Cloud & Phoma Fruit Spot of Apple — Anthracnose of Cantaloupe, Watermelon & Small Fruits — Bitter Rot, Black Rot & Downy Mildew of Grape
Beet, Tomato & Spinach Damp-off (Seed Treatment) — Lettuce Drop
. . . and many diseases attacking the foliage and fruit of citrus and nut trees.

Control POND SCUM and ALGAE in farm waters with Triangle Brand Copper Sulfate

FENCE POST treatment with Triangle Brand Copper Sulfate prevents decay and termite damage

Send today for information on these important uses of copper sulfate

PHELPS DODGE REFINING CORP.
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SHIPPERS – GROVE OWNERS
JUST OFF THE PRESS

CITRUS MATURITY RATIO TABLES
(THIRD EDITION)

FLORIDA GROWER PRESS
P. O. BOX 150 TAMPA

A new edition including the entire range of acid-solid ratios is now available.

Compiled in a simplified form for quick accurate answers. This book of tables will save you laborious calculation and afford higher accuracy in determining the acid-solid ratio of your fruit.

BOUND IN STRONG RED LEATHERETTE

$5
POSTAGE AND TAX INCLUDED

New Aids To Farm Living

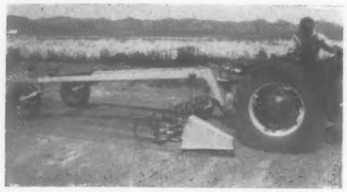
Long-Life Fabric for Shade Tobacco

Lightweight yet durable is this new shade fabric offered by Chicopee Manufacturing Corporation of Cornelia, Georgia. Called Lumite Rovana, it is woven from a synthetic developed by Dow Chemical Company. The yarn is reportedly so tough that it's virtually unaffected by weather.

A wide range of special weaves includes 18 x14 constructions for side walls and 15 x 12's for top cloths. Side walls of the fabric may be left up indefinitely, thus sparing tobacco growers the cost of seasonal replacement. Top cloths may be rolled up and left secured to the bracing wires during off seasons.

Initial per-yard cost of this fabric is about 50% higher than cotton. However, according to the manufacturer, its life of three years or longer makes the per-season cost much less expensive. Too, growers are spared time and labor costs of annual fabric replacements.

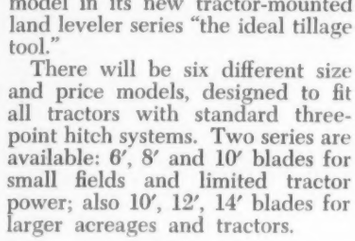
Land Smoother



Low-cost maneuverability, according to Eversman Manufacturing Company of Denver, makes any model in its new tractor-mounted land leveler series "the ideal tillage tool."

There will be six different size and price models, designed to fit all tractors with standard three-point hitch systems. Two series are available: 6′, 8′ and 10′ blades for small fields and limited tractor power; also 10′, 12′, 14′ blades for larger acreages and tractors.

Three-Wheel Windrow Turner

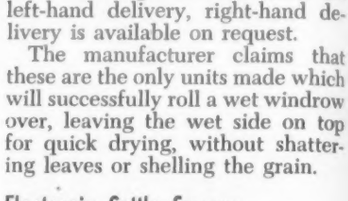


Continuing its product modernization, Pollard Manufacturing Company of Minneapolis has remodeled its one- and two-wheel windrow turners and added the three-wheel model shown above.

The new three-wheel unit and the remodeled windrow turners are being built with many parts that are interchangeable with the Pollard finger-wheel type side delivery rake. Although standard units are left-hand delivery, right-hand delivery is available on request.

The manufacturer claims that these are the only units made which will successfully roll a wet windrow over, leaving the wet side on top for quick drying, without shattering leaves or shelling the grain.

Electronic Cattle Sprayer

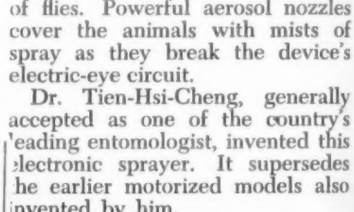


Unique in its field is "Mist-I-Fly" newly-patented aerosol cattle sprayer introduced by the Milfred Company of Pittsburgh. It was invented by a member of Pennsylvania State University's entomology and zoology department.

As its name implies, "Mist-I-Fly" is an automatic appartus designed to keep beef and dairy cattle free of flies. Powerful aerosol nozzles cover the animals with mists of spray as they break the device's electric-eye circuit.

Dr. Tien-Hsi-Cheng, generally accepted as one of the country's leading entomologist, invented this electronic sprayer. It supersedes the earlier motorized models also invented by him.

Two-Roll Hay Conditioner



"Completely plug free" is the way company engineers describe this new two-roll hay conditioner manufactured by Brillion Iron Works, Inc. of Brillion, Wisconsin.

Elimination of plugging is achieved by use of an entirely new concept in the pick-up roll—"stair-stepped" steel slats on a thick-wall steel tube operate against a fabric-reinforced rubber roller. A unique unit-constructed frame gives extra rigidity and strength for support of rolls.

Other features include self-aligning ball bearings on extra-wide roller mountings, roller chain drive, adjustable slip clutch, plus a new and more efficient PTO shaft design.

SOUTHERN DOLOMITE
PALMETTO, FLORIDA
PHONE: BRADENTON 2-1411

SRS
the mark of better
VINE CROP SEEDS

For almost a century Lawrence Robinson & Sons, a Breeder Division of SRS, have specialized in the production of quality vine crop seed. Their reputation as the recognized leader in this field was acquired because of their meticulous attention to every phase of seed production and the rigid quality controls that are enforced from the selection of the stock seed to the final harvesting and cleaning.

Growers and shippers alike from coast to coast are reaping the benefits in superior yields of top quality that the combination of SRS research and Robinson "specialist-produced" seed provides.

The full line of seeds bearing the SRS mark is your assurance of the best. They are available only through SRS Distributors and their Dealers throughout the world.

Rigid SRS stock seed quality control is your assurance of true-to-type varieties year after year.

Breeding experts o SRS staff are constantly working to develop new, improved varieties area adapted to grow best for you.

SRS Marketer Cucumber is a special strain created to meet demand for medium sized, dark green cucumber with slightly tapered tip.

SRS Imperial PMR45A is a good keeper, has uniform oval shape, full netting, small seed cavity.

SRS
SEED RESEARCH SPECIALISTS, INC.
P. O. Box 3091, Modesto, California, U.S.A.
Better Seed through Specialization

Conner Looks to the Future *(Continued from Page 19)*

try, the cattle, the dairy, the swine, the tobacco, the peanut, and the sub-tropical fruit industries and from general agriculture . . . just to mention a few of the phases.

When named, the members of the Market Institute will get together with the personnel of the Department of Agriculture and work out plans to improve statistical information that is vital to planning production and marketing.

Of course, the well-organized agricultural groups may not need such assistance. But they will be called upon to help the Department assist those unorganized groups that wish to organize.

Those areas of agriculture that are not now organized to do promotion of their products, like the Citrus Commission or the Egg Commission are doing, will be encouraged and assisted to organize by commodities for the purpose of planned promotion and advertising.

All means of communications—the press, radio, television, etc.—will be used to reach the consumer with the story of FLORIDA products.

Commissioner Conner's activities will also encompass all areas directly concerned with or impinging upon Florida agriculture.

In the future, work with the Florida Restaurant Association will be continued—and further emphasized—to encourage whenever possible the use of Florida products.

For the first time in the history of Florida, the Plant Board becomes a Division of the Florida Department of Agriculture. This Board is the protector of agriculture. Especially has it protected citrus and vegetables from inroads of plant diseases and insects that would destroy these industries as well as general crops of Florida.

Now, for the first time also, the Livestock Board becomes a part of the Florida Department of Agriculture. This board, called the "watch dog" of Florida's animal industry, has done yoeman's work in eradicating the fever tick and the screwworm.

Work of the Livestock Board will be carried forward with renewed vigor.

Continued with greater emphasis will be one of the old activities of the Department of Agriculture—the feed, seed, and fertilizer inspection division. This service assures the grower that he gets the quality and quantity of the product he purchases.

The Gasoline Inspection service protects the users of gasoline and kerosene by assuring them that the quality is good and the measure is accurate.

Helping to keep the quality of all food good and the grade accurate as advertised is the Food Inspection division. This service checks food packages for accurate weight.

An asset to the processor, packer, and retailer is the Poultry Division. Personnel of this unit assist in grading, displaying, and labeling.

Florida's Department of Agriculture will continue to assist producers to organize for the purpose of assembling, grading, packing, and selling their products.

Beekeepers are a vital part of Florida Agriculture. Without bees, there would be very little citrus produced; they fertilize the blossoms of many plants by carrying pollen from one to another.

Florida's beekeepers will be given every assistance possible in grading, inspection, and marketing of honey.

Horticultural specialities—among which gladiolus and chrysanthemums are prominent—have grown into a multi-million dollar business in Florida. Assistance in marketing is planned for this group, especially through the Market Institute.

Often overlooked are sub-tropical fruits. Every assistance will be given them through aids such as market information, promotion, etc.

Further extended also will be the work done under the Agricultural Bond and License Law for citrus and other producers. This work was responsible for collecting over $200,000 worth of bad accounts in 1960.

TRI-BASIC COPPER
(MICRONIZED)

No Other Fungicide Offers So Many Advantages!!

Longer protection against persistent fungus diseases – Spray or dust – Easy to apply – Effective control – Upgrades quality of fruits and vegetables – Compatible **Micronized Tri-Basic Copper** – Means finer particles – Better foliage coverage – More economical.

The tried and proven dependable fungicide used on Florida vegetables for a quarter of a century.

INSIST ON MICRONIZED TRI-BASIC COPPER SULFATE

Quality Controlled from Mine to Finished Product

TC TENNESSEE CORPORATION
TENNESSEE CORPORATION
612-629 GRANT BUILDING, ATLANTA 3, GEORGIA

MEET OUR ¼ MILLION SALESMEN

Here they stand—row after row—½ mile long. The very best trees that can be grown—free of the viruses, psorosis and xyloporosis—with State Plant Board registration to prove it. Give us a chance to introduce you. Call us for an appointment.

All commercial varieties on all major rootstocks. Prices start at $1.40 for regular buds. All registered buds a flat $2.00 on orders of 100 or more. Special quotations on large orders.

SPECIAL—Several thousand extra large Pineapple and Valencia on rough lemon still available for replants.

FOR FURTHER INFORMATION CALL OR WRITE

WARD'S NURSERY, INC.

GLENDALE 3-4657 BOX 846 AVON PARK

When you need extra potash

USE CHILEAN NITRATE OF SODA-POTASH

Chilean Nitrate of Soda and Chilean Nitrate of Soda-Potash are the only natural nitrate fertilizers in the world. Chilean Nitrate of Soda-Potash is a natural combination of nitrate nitrogen, potassium nitrate and sodium. It is particularly valuable when the form in which the potash is supplied is an important consideration. Potassium nitrate is a superior form of potash for many crops. The sodium increases the availability of the potash and expedites its uptake by the plant. It is valuable also in maintaining greater availability of phosphate in the soil or applied in superphosphate.

To be sure you get the natural nitrate fertilizers, specify Chilean Nitrate of Soda or, where you need extra potash, Chilean Nitrate of Soda-Potash. Look for the bulldog on the bag.

NATURAL CHILEAN NITRATE OF SODA & NITRATE OF SODA-POTASH

Florida Citrus Grades Amended

AMENDED U. S. Standards for grades of Florida oranges and tangelos, and grapefruit, became effective the 10th of last month.

Changed by the amendment were both the amount and type of discoloration required in the U. S. No. 1 Bronze grade. USDA officials said the amendment represents an effort to provide a more practical application of this grade.

The previous Bronze grade required simply that the predominating discoloration of each fruit must be of the rust mite type. (This is a desirable form of discoloration.)

Now, however, the amendment in both standards require that more than 30% of the fruits shall have more than one-third of the surface — in the aggregate — affected by discoloration which must be predominantly of the rust mite type.

' ' '

Leanness in Hogs

(Continued from Page 14)

pounds of feed per pound of gain for a feed cost of $10.15 per 100 pounds of gain.

Most important, these pigs yielded more lean cuts — 54.65% — than any control or test animals.

Even though barley is higher in energy than the other fibers, the animals fed this grain as their fiber source also did well. But they yielded only 52.63% lean cuts.

Highest gainers were the control animals kept on the high-energy corn diet. Feed costs were up, though, averaging $10.52 per 100 pounds of gain. Furthermore, yields of lean cuts averaged only 51.20%.

So far, the tests show that corncob meal has promise as an economical and useful source of fiber for hogs. Hoefer points out, however, that it's still too early to judge its long-term effectiveness.

Hormone implants, given barrows in University of Missouri tests, resulted in more lean meat and less backfat. The barrows were implanted when they weighed 100 pounds and slaughtered at 205-pounds weights.

Two groups of pigs received different levels of progesterone and estradiol benzoate in one of the series of tests. No hormone implants were given the control group.

Both levels of the progesterone-estradiol treatments, it is reported, reduced backfat. The high-level treated hogs probed an average of 1.36 inches of backfat; those getting less, an average of 1.54 inches.

Carcass cuts from the hogs which received the high-level treatment had 1.7% more lean cuts. Furthermore, they had larger loin eye areas.

Nutritional and genetic changes are both necessary to bring about the meat type pig. Naturally, genetic changes are more permanent.

Genetic changes, however, take longer to produce the desired results. Nutritional changes, on the other hand, produce almost immediate results.

Penfield

FIRST CHOICE OF PEOPLE WHO KNOW GUIDE BARS

PENFIELD guide bars . . . used as original equipment on more saws, by more chain saw manufacturers, than any other guide bar in the world.

PENFIELD . . . used more and more, every day, by experienced loggers as replacement bars.

PENFIELD . . . the bar you can depend on. We're proud to have so many satisfied users among men who know guide bars.

Fine products for forestry!

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SALES SUBSIDIARY . . . **BLUEJET CORPORATION,** HOPEDALE, MASS.

Citrus CLOSE-UPS

By FRED P. LAWRENCE

Citriculturist
Florida Agricultural Extension Service

Girdling Ups Tangelo Yields

"To girdle or not" is no longer the question for Orlando tangelos and possibly navel oranges. By experiments conducted primarily in Lake County, Dr. A. H. Krezdorn, head of the Fruit Crops Department at the University of Florida, has been able to increase Orlando tangelos yields – simply by girdling the tree.

Because of its high quality, early maturity, and zipper skin, the Orlando tangelo has been a "hot" item on the fresh fruit market. Yet it has also been a disappointment for most growers. In spite of its strong demand at good prices, grower enthusiasm for this variety has waned because of its characteristic low, erratic yield.

Dr. Krezdorn says that this can be overcome by cross-pollination.

Cross-pollination, commercially, requires that trees of the proper pollinating variety (Temple is the best) be planted at intervals throughout the grove. The pollen is then transferred to the tangelos by insects.

While this is a sound permanent solution, it produces fruit with numerous seeds in a variety that is normally seedless. And seeds are somewhat objectionable in a fruit that has been considered seedless.

Another drawback is that several years are required for the inter-set trees to attain sufficient age to blossom and bear pollen.

For these reasons, some means of inducing fruiting without the stimulus resulting from cross-pollination, sexual fertilization, and subsequent seed production was sought.

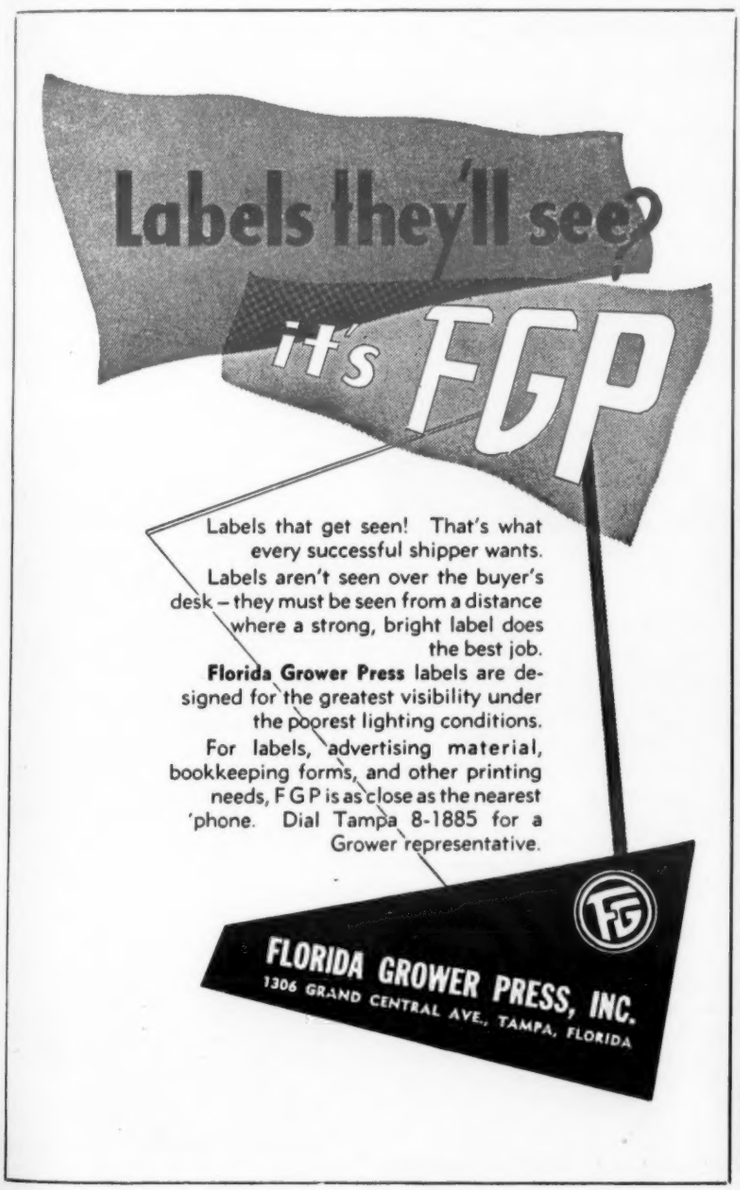
One method of approach consisted of girdling the trees with a single knife cut.

The cut was made completely around the tree trunk and extended through the cambium into the wood. This phase of the investigation hit the jack-pot.

When girdled at the proper time (during late bloom and petal fall) a consistent, large increase in fruiting resulted. Furthermore, the the fruit was seedless!

Dr. Krezdorn points out that this is not a new idea. Girdling has long been used as a tool of plant

(Continued on Page 39)


Labels they'll see?
it's FGP
Labels that get seen! That's what every successful shipper wants. Labels aren't seen over the buyer's desk – they must be seen from a distance where a strong, bright label does the best job.
Florida Grower Press labels are designed for the greatest visibility under the poorest lighting conditions.
For labels, advertising material, bookkeeping forms, and other printing needs, F G P is as close as the nearest 'phone. Dial Tampa 8-1885 for a Grower representative.
FLORIDA GROWER PRESS, INC.
1306 GRAND CENTRAL AVE., TAMPA, FLORIDA

Myers Air Sprayers Deliver a Penetrating coverage that

REALLY PROTECTS!

Exclusive Air Handling Makes the Difference—Powerful, twin centrifugal fans send a high volume of air off the fan blades straight into tree foliage. Tapered outlet case directs a properly proportioned spray pattern into all areas of the foliage. Spray from both sides at once or, to increase foliage penetration, send all air out one side by adjusting sliding covers for right or left hand spraying.

Touch-Matic Control mounts on tractor, gives operator complete control at finger tips. Keeps waste at a minimum, greatly reduces spraying costs.

Miracle finish Epoxy is standard on all Myers Sprayer tanks —a quality extra at no extra cost.

Specifications Myers Air Sprayers

MODEL NUMBER	ENGINE	TANK SIZE	FAN TYPE	AIR-CLASS C.F.M.	REMOTE CONTROL DISCHARGE
58120-232ET5	Water Cooled Gasoline	500	Twin 32" Centrifugal Fans	80,000 at 80-90 MPH	Touch-Matic***
6095-227ET5	Water Cooled Gasoline*	500**	Twin 26" Centrifugal Fans	60,000 at 80-90 MPH	Touch-Matic***
6095-225ET4	Water Cooled Gasoline	400	Twin 24" Centrifugal Fans	45,000 at 80-90 MPH	Touch-Matic***
6040-A36ET4	Air Cooled Gasoline	400	Axial Flow 36"	30,000 at 60-80 MPH	Manual

*6095-227ET5 Also available with Diesel Engine.
**400 Gallon Tank and High Pressure Piston Pump Optional.
***Discharge valves activated through electrically controlled hydraulic system.

Prove to yourself —ask your Myers Sprayer Dealer for a demonstration in your own orchard. He'll be glad to show you how a Myers air sprayer will improve your yield —increase your profits.

Myers The F. E. Myers & Bro. Co.
6236 Phillips Highway • Jacksonville 7, Florida

Tariff Act Redress Asked *(Continued from Page 6)*

had no opportunity whatever to furnish supplies of winter fruit to the British market, according to the complaint.

"Yet for the past four years," continues the letter, "Great Britain has permitted imports of Cuban grapefruit between October and December—but excluded the Florida product."

Innumerable formal protests have been addressed to the British government over these discriminatory practices in the past seven years, the statement continues.

"On occasion, British spokesmen have openly admitted they are violating their solemn obligations under GATT, yet have taken no steps to redress them.

"There has been token relaxation on canned juices and grapefruit sections. But the quotas are a fraction of what might be sold under complete liberalization.

"From past experience, it is clearly evident that representations through our Department of State have not produced the desired relaxation by the British authorities. The data and enclosures presented here indisputably support our claim that the British government is imposing unreasonable limitation on American Citrus products which is not equally enforced upon the like articles of every foreign country.

"It supports our contention that the British government discriminates in fact against the commerce of the U. S., directly, by administrative regulation, and in such a manner as to place the commerce of the U. S. at a disadvantage compared with the commerce of any foreign country."

Florida's congressional delegation is therefore asked to instruct the U. S. Tariff Commission, as provided in the 1930 law, to:

"Undertake its own independent investigation of the charges presented here, and make recommendations for appropriate countermeasures against the offending party as set forth in the law."

These countermeasures could be pretty severe.

Mildest of these would be withdrawal of the concessions which Great Britain now enjoys under the "most favored nation" clause of the U. S. tariff regulations. Or tariffs on British goods brought into the U. S. could be increased up to 50% ad valorem.

Complete prohibition of all imports into the U. S. from Great Britain would be the stiffest penalty.

Any countermeasures would go into force on proclamation by the President of the United States, who would act on a recommendation from the tariff commission.

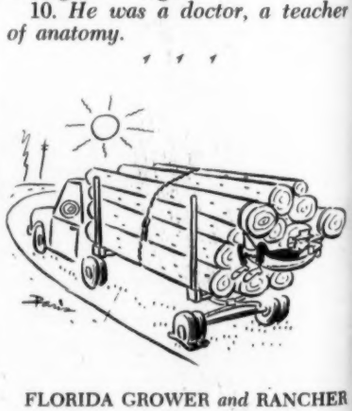
* * *

How smart are YOU?

(Answers to Questions on Page 3)

1. *A limp shrimp.*
2. *One from which objectionable passages have been removed.*
3. *The Stone Age.*
4. *John Tyler, the 10th U. S. President (1841-45), had seven children by each of his two wives.*
5. *No. marble weathers badly.*
6. *". . . with liberty and justice for all."*
7. *An alcoholic solution of a medicinal substance.*
8. *The federal income tax.*
9. *In 1776—at William and Mary College, in Virginia.*
10. *He was a doctor, a teacher of anatomy.*

* * *

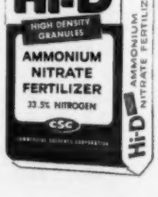


✻ for more "grow-power" per fertilizer dollar: use mixed fertilizers made with Hi-D°!

Can a fertilizer really give you more "grow-power" per fertilizer dollar? Your local fertilizer manufacturer will tell you, "Yes."

To give you more "grow-power," he formulates special plant foods for Florida-grown crops. And he most always uses Hi-D Ammonium Nitrate as the key ingredient in the mix.

He uses Hi-D because there's no other ammonium nitrate like it! Hi-D is made by an exclusive patented process that results in special-shaped granules that assure even distribution of the nitrogen throughout the mix. These strong, high-density Hi-D granules resist break-up and are easy to handle. Super dry Hi-D stays dry in storage, in handling, and in the field – even on hot, sticky days.



What's more, Hi-D furnishes the two types of nitrogen crops do best on – nitrate nitrogen for strong early growth–ammonia nitrogen for sustained follow-up feeding. This makes it ideal for mixed goods. Hi-D contains 33.5% nitrogen which makes it ideal, too, for supplementary feedings to give crops a nitrogen boost.

Check with your local fertilizer supplier – he'll make recommendations on timing the applications and on placement. He'll also be glad to give you the benefits of his long experience in tailoring fertilizers for maximum crop yields.

COMMERCIAL SOLVENTS CORPORATION, AGRICULTURAL CHEMICALS DEPT., 1958 MONROE DRIVE, N.E., ATLANTA 9, GEORGIA

Citrus Close-Ups *(Continued from Page 37)*

science. Seldom, though, has it given much striking results as in the case of Orlando tangelos.

Limited trials on navel oranges have also been conducted. Results so far indicate that they, too, can be made to increase production by girdling the tree during the time the tree is in full bloom . Results with navels, however, are somewhat erratic.

* * *

First Step Taken A definite step has been taken to combat one of agriculture's biggest economic losses – machinery breakdown.

Henry Swanson, Orange County Agricultural Agent for the University of Florida's Agricultural Extension Service, has completed a very successful five-week, 10-hour course on tractor maintenance and breakdown prevention. In addition, a two-week, four-hour course was held on air-blast type spray machines.

The course was a cooperative effort. Tractor and sprayer companies furnished the machines; factory-trained representatives taught the courses. Cooperating owners and production managers enrolled their tractor and spray-machine operators, while Swanson organized and administered the school.

We congratulate Swanson on his striking at the heart of one of agriculture's biggest inefficiencies – the untrained machinery operator.

Time to Unbank Thousands of young citrus trees have been sitting out the winter, protected from its occasional icy-blasts by two feet of warm soil banked around them. During the month of February, usually around St. Valentine's Day, growers commence unbanking these young trees and preparing them for the long growing season ahead.

Unless conditions change from the worse between the time of this writing (January 6th) and then, Florida's young citrus trees will have come through the winter with less cold damage than at any time since 1955. Or, at least, this seems apparent.

Of course, there have been a few cold locations in which young trees were nipped. Few, however, were frozen to the extent of losing appreciable heavy wood. Young trees should make substantial growth during the next few months.

Do a Better Job In unbanking young trees, growers are encouraged to do a better job than has generally been done during the last two springs.

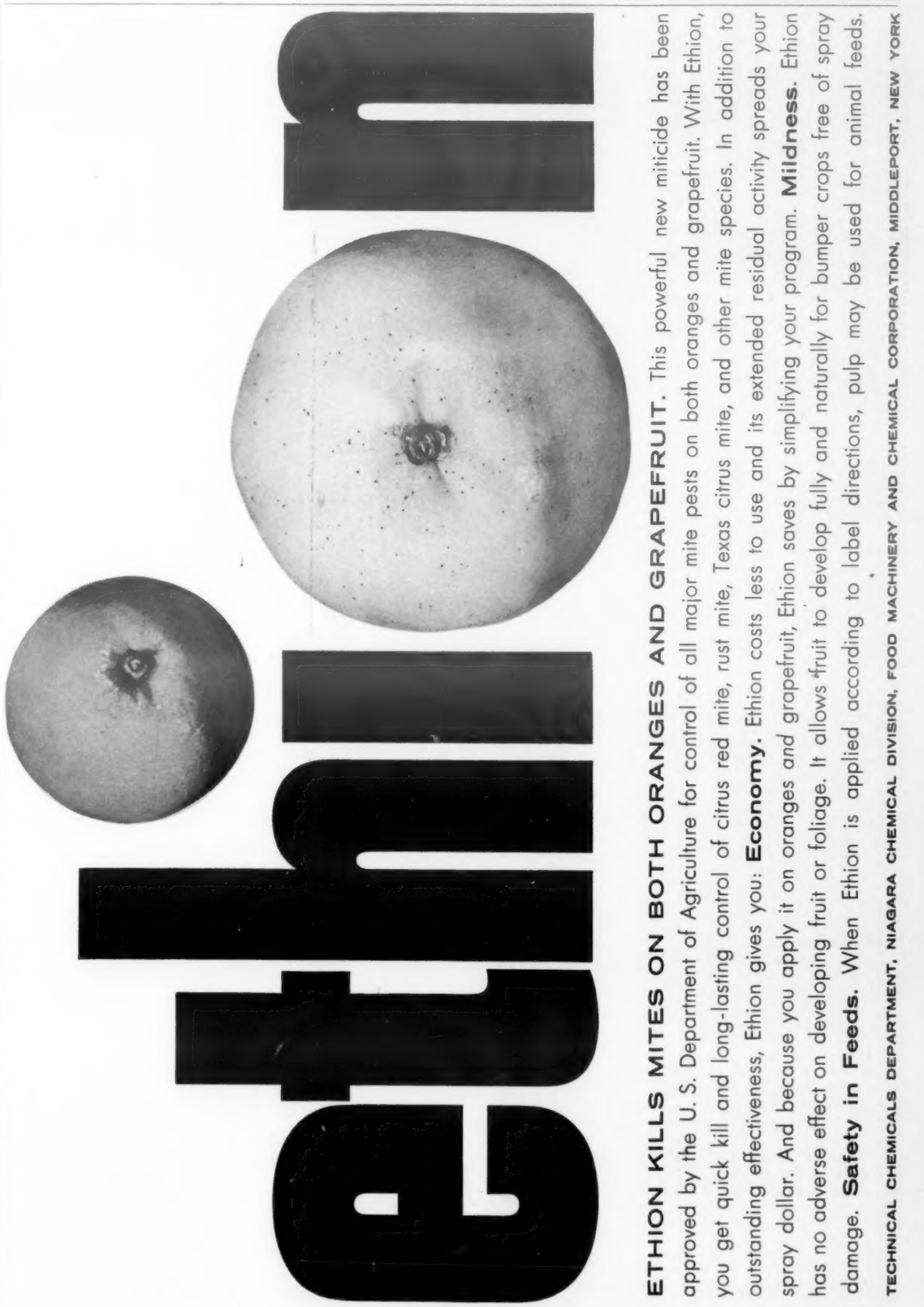
Unfortunately, many young trees were only partially unbanked. This, coupled with mechanical injuries to tree trunks plus two wet years, led to one of the worst foot-rot invasions and heavy tree losses in years. Also, improperly or partially unbanked trees do not grow as rapidly as they should.

Trees growing on soils not subject to spring wind erosion should have all soils removed to the crown roots. Trees on sandy soils subject to wind erosion should have some of the bank left – but this, too, needs to be removed at the first hoeing, which usually comes in late March or early April.

One other caution: Many young trees now being handled by mechanical tree hoes are being partially banked by them. This is not necessarily a fault of the machine; nevertheless, it does occur in many young plantings.

In these cases, steps should be taken to remove the excess soil and vegetative growth as it will hasten tree growth and reduce foot-root.

COMING . . .
1961 progress report on
Weed Control in Florida Agriculture
. . . . in April


ethion
ETHION KILLS MITES ON BOTH ORANGES AND GRAPEFRUIT. This powerful new miticide has been approved by the U. S. Department of Agriculture for control of all major mite pests on both oranges and grapefruit. With Ethion, you get quick kill and long-lasting control of citrus red mite, rust mite, Texas citrus mite, and other mite species. In addition to outstanding effectiveness, Ethion gives you: Economy. Ethion costs less to use and its extended residual activity spreads your spray dollar. And because you apply it on oranges and grapefruit, Ethion saves by simplifying your program. Mildness. Ethion has no adverse effect on developing fruit or foliage. It allows fruit to develop fully and naturally for bumper crops free of spray damage. Safety in Feeds. When Ethion is applied according to label directions, pulp may be used for animal feeds.
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